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THE AMERICAN JOURNAL

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PHARMACEUTICAL EDUCATION

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WILLIAM G. CROCKETT

A Message from the President

In response to a letter from Editor Lyman asking that I make a contribution to this Journal, I am reminded at the outset that it is The American Journal of Pharmaceutical Education. I am reminded furthermore that until recent years our conception of pharmaceutical education was entirely too restricted. During the past twenty years constructive forces have been at work which have enabled us to pass many educational milestones.

These advances are too fresh in our memories to warrant individual mention. They may be summarized by saying, however, that pharmaceutical education as now offered consists not merely of the mastery of certain manipulative processes, but recognizes such training as a part of a broader program which includes sound education in the arts and sciences.

Among the chief objectives of this program are the development of a cultural background and the broadening of perspective. It is hoped that it will arouse in the pharmacy student and in the pharmacy graduate, a keener appreciation of the responsibilities attached to him as a member of the public health professions, and that it will create in him a more earnest desire to serve.

Our program is constructive and our plans creditable; our task, however, is not a finished one. Its fulfillment is a challenge to each of us. It is a challenge to the depth of our insight, to our sincerity of purpose, to our willingness and ability to give unselfishly of the best that we have in us, towards a cause which we profess to be a worthy one.

The American Journal of Pharmaceutical Education is one of our most recent undertakings. It is a serious endeavor, for by it we will be judged. It is projected as the mouthpiece of our teaching profession. It should prove a stimulus to each of us, particularly to our younger members. It is the logical medium for the expression of their thoughts, their teaching problems, their plans and their criticisms. It is a worthy experiment—a challenge to us all. Although its field of usefulness is conceded, its future is by no means assured. The success of this Journal, like that of pharmaceutical education in general, will be measured by the interest we take in it, by the pride we feel in it, and by the vigor with which we support it.

William G. Crockett.

Cultivation of Ephedra in South Dakota

By B. V. Christensen, School of Pharmacy, University of Florida, and Lovell D. Hiner, Division of Pharmacy, South Dakota State College

Ephedra sinica seed for trial planting was received from Peking Union Medical College in 1929, and the first planting made in the greenhouse on November 6th of the same year. Germination was excellent by November 20th, and on May 15, 1930, 73 thriving ephedra plants were potted, and on June 30, 1930, these were transplanted into the medicinal plant garden. The following winter the plants were moved into the root cellar for protection and were again set in the garden plots in the spring of 1931. That fall the first cutting of stems was made, and thereafter the roots were allowed to remain in the ground undisturbed during the winters of 1931-1932 and 1932-1933. Such was the status of ephedra in South Dakota at the time the writer became interested in its possibilities as a domestic drug crop.

As proof of the hardiness of the ephedra plants, the writer simply calls to your attention their survival of those memorable years of the "ghastly black blizzard," when the average annual rainfall would not average more than a dozen inches, and the winter of 1935-36, pronounced the coldest for South Dakota in 50 years. On many occasions the top soil was blown from the plants until they were anchored only by the tip ends of their long sturdy tap roots, but in spite of this they continued to thrive. Small wonder, then, that this plant attracted considerable attention. Furthermore, it is well known that there is no domestic source of supply for this very important crude drug. These considerations prompted the selection of this problem for an original research project, namely, the determination of the possibilities of commercial production of ephedra in South Dakota.

A problem of this sort logically involves two important points, namely, the methods of propagation and cultivation best adapted to handling such a crop, and the methods and proper time of harvesting and the methods of curing which will insure the highest yield possible of the active principle, ephedrine. The fourth season of systematic investigation of these plants is now being completed.

Propagation and cultivation of ephedra appears to be not too difficult a matter, for the plants reproduce from seeds, and also from runners which develop into several sturdy plants that mature rapidly. These new plants transplant very well, by severing them from the old root and allowing them to remain undisturbed for about three weeks before moving them to their new location. This allows ample time for their own root systems to develop and assures greater success in transplanting than when they are moved immediately after cutting the runners. As for the seed, it is best handled by planting it outside in rows where it can be cultivated until the plants are at least two years old, at which time they are well enough developed to transplant into the field at the desired spacing. Ephedra, as it matures undisturbed, resembles very much the ordinary alfalfa crop in its growth habits. It roots deeply, and spreads by runners to form a sod which soon eliminates the necessity for cultivation except for hand weeding, all of which makes for easy production of the crude drug.

The soil adaptations of ephedra leaves much to be determined by research into this phase of its cultivation. The plants thrived so well during the drought that it suggested the possibility of their being introduced into the marginal region of the state, particularly of the Bad Lands section. With the limited funds available, however, only one test plot of this type has been established. Stems returned from this plot, which happens to be in the Bad Land region, compared favorably with those produced in eastern South Dakota. They were smaller in size, but the plants were healthy and well established in the light sandy soil. Two-year old stems from this plot assayed 0.347 per cent ephedrine, indicating that ephedra may be suited to a section of the state which is at the present time almost unproductive. The experimental plots in eastern South Dakota are planted in well-drained rich black loam. Hence, even with much left to be done on the soil problem, production of ephedra seems practically assured, leaving the problem of harvesting and curing the herb as the next important step.

The first harvest was used for the determination of the time of year the cuttings should be made, and for the determination of the normal alkaloidal content of the stems. Harvesting was begun on September 13, 1933, and one

cutting made each week until six successive cuttings had been completed. By this time heavy frost had checked further development of the plants. These cuttings were oven cured and assayed with the following results:

TABLE I.

1933 Harvest Dates.	Care.	Assay.
1. September 13th	Oven dried	0.0737%
2. September 20th	Oven dried	0.0935%
3. September 27th	Oven dried	0.0977%
4. October 4th	Oven dried	0.0894%
5. October 11th	Oven dried	0.0725%
6. October 18th	Oven dried	0.0792%
7. October 4th ¹	Sun cured	0.126%

A study of the above table revealed three points of particular interest. It showed:

1. The alkaloidal content of the one-year old stems to be exceedingly low.

2. It further suggested that the proper time to cut ephedra was around the latter part of September or the first of October, and also, since the October 4th¹ cutting which was cured on the ground where it fell when cut contained the highest per cent of ephedrine.

3. It suggested that perhaps the proper way to handle ephedra might be cut and cure it like ordinary hay crops, rather than to oven cure it.

The main concern at this time, however, was over the extremely low ephedrine content.

Further results along the above lines were obtained from the 1934 crop as shown in Table II.

TABLE II.

1934 Harvest Dates.	Care.	Assay.
1. September 27th	Sun cured	0.1501%
2. September 27th	Shade cured	0.1487%
3. September 27th	Oven cured	0.1321%
4. October 11th	Sun cured (frosted)	0.1509%

The above ephedra stems again represented one season's growth for they were all cut back the preceding fall. The findings of this season corroborated those of the year before, mainly:

1. That the alkaloidal content was extremely low for single-year stems.

2. That probably the best time to harvest ephedra would be the latter part of September, since there is danger of damaging frosts around the first part of October.

3. That the stems left in the field to cure in the sun contained the highest per cent of ephedrine.

It was evident from the assay figures, that some improve-

ment in quality would have to be made to justify a continuation of the project.

Realizing the futility of attempting to increase the alkaloidal content simply by growing and harvesting the stems year after year, the writer became interested in discovering some new procedure which would increase the existent low alkaloidal assay. It was evident, too, that if such could be done, the more natural the process involved, the more valuable it would be, since if ephedra was to become a commercial crop, its production must be as easy as possible. A review of literature disclosed the fact that originally the plants were not cultivated, for the Chinese had long been gathering the drug from its natural habitat in the wild state. It appeared possible, then, that the stems were perennial, and that the ephedrine content of about one per cent had developed gradually in the maturing of the stems for several years.

A careful survey of the garden records for the several years past, showed conclusively that ephedra roots were hardy and perennial when left undisturbed, but the records also revealed that the stems had never been left uncut for two seasons to determine if they too were perennial in this climate. Accordingly, four test plots were left uncut in the fall of 1934 to determine what the condition of the stems would be in the spring of 1935. These beds contained enough plants so some could be left to mature through their fourth year if it was desired.

The progress of the stems during the winter was carefully noted. They remained upright, and except for developing a slightly black coloration, looked perfectly normal. Their fracture was brittle and green, the color resembling very markedly that of the fresh growing stems in mid-summer. Very early the next spring they regained their normal succulence and green color, and further, there was promise of an increased stem production due to the profuse branching from each node of the old stem. The per acre yield of stems in the fall of 1935 showed that nothing had been lost in crop weight by allowing the stems to mature this extra season, for the branching of the old stems compensated for the lost cutting.

This in itself was particularly gratifying; besides, there was the possibility of an increased seed production to hasten propagation, as well as the possibility that maturing the

stems might increase the ephedrine content. By the middle of May, seed production was well advanced, which promised plenty of time for the seeds to mature, where heretofore they had just escaped frost. Seed production from the second-year stems showed an increase of 66 per cent by weight over the best figures ever obtained from stems one season old. This, too, was gratifying, and the question then remained, has the ephedrine content increased, and if so, enough to encourage production?

Cuttings of the two-year old stems were begun on September 23, 1935, followed by three successive harvests at weekly intervals. These were cured and assayed with results shown in Table III.

TABLE III.

1935 Harvest Dates.	Care.	Assay.
1. September 23rd	Sun cured	0.364%
2. September 23rd	Shade cured	0.361%
3. September 30th	Sun cured	0.363%
matured but one season, i. e., they were the stems produced		
4. September 30th	Shade cured	0.366%
5. October 5th	Sun cured	0.364%

Cuttings were also made in 1935 from stems that had the summer of 1935 from plants harvested in 1934. The results of these harvests are shown in Table IV.

TABLE IV.

1933 Harvest Dates.	Care	Assay.
1. September 23rd	Sun cured	0.153%
2. September 23rd	Oven cured	0.083%
3. September 30th	Sun cured	0.152%
4. September 30th	Shade cured	0.150%

Table IV substantiates the findings of Tables I and II; that the stems produced by a single season's growth run extremely low in ephedrine and further suggests that even moderate heat in oven curing the herb is detrimental to its alkaloidal content.

Table III, however, contained the most promising information of all. By simply allowing the perennial stems to mature this extra season, the ephedrine content increased 144 per cent over the highest figure ever obtained from the single-season stems. Those stems which were left on the ground outside cured so nicely that it assures ease in cutting and caring for the stems.

Aging the ephedra stems an extra season, then, was found to be decidedly encouraging for the following reasons:

1. It increased stem production.
2. Seed production increased 66 per cent.
3. It increased the ephedrine content.

How far the natural phenomena will continue to advance of course, remains to be determined by continued experimentation. From data thus far obtained it is possible to suggest the following conclusions:

1. *Ephedra sinica* stems and roots are both hardy and perennial in South Dakota.
2. The plants produce viable seeds, assuring rapid propagation both from these, as well as from numerous runners that develop into new plants.
3. The crop may be handled like any ordinary hay crop, by cutting it with mowers, allowing it to cure in the field, and then bale for shipment.
4. The proper time for harvesting favors late September, since damaging frosts are expected by October first.
5. The undisturbed plants spread to form a sod which eliminates cultivation except for hand weeding.
6. Stems produced in a single growing season are small, bear few seeds and run low in ephedrine content.
7. Maturing the stems for a second growing season increased stem production from the nodes of the old stems, stimulated seed production, and increased the ephedrine content.
8. The best assay figure obtained thus far is still considerably below that of the imported drug, but in case of an emergency, ephedra of fair quality could be produced in South Dakota.

In a recent letter to committee chairman, President Crockett gave some good advice when he wrote—"Secretary Cooper has informed me that in recent years complaints from committeemen, particularly from the younger members, have become more numerous because committee chairmen have not requested their help or communicated with them during the year. Although I have been guilty of this oversight myself, I realize that such thoughtlessness tends to impair morale, particularly among the younger members. It is a condition that should not prevail; therefore, I am bringing it to your attention."

General or Pharmaceutical Botany For Pharmacy Students

by LOVELL D. HINER

Division of Pharmacy, South Dakota State College

In order to avoid any confusion in the minds of those who adhere strictly to the thought that general botany is essential to the proper background for the study of pharmacognosy, permit me to present a slightly different viewpoint, based upon my experience with both forms of teaching.

These two points I should like clearly understood; more particularly, the fact that the elements of botany are definite and unchangeable for the most part, and secondly that the writer is not in any sense condemning the general botanist for lack of information. The subject of pharmaceutical botany does not embody any new or strange botanical secrets. It is merely the more effective application of the sound principles of general botany in such a way as to make them more suited to the specific needs of a profession. Certainly the general botanist has this same information, but the contention is that he is compelled to serve such diverse groups and demands that he finds it difficult to satisfy the needs of each. Consequently, where specialization is necessary, the students may not be receiving the information which they should have.

The controversy concerning the proper place for teaching botany in the pharmacy course was first brought to the writers attention while studying the science as an undergraduate student. Fortunately, training in both general botany which was offered to all students alike regardless of their respective courses, and pharmaceutical botany, a specific course for pharmacy students, were available. After completion of this work, the comparison of the two courses and the subject matter which they offered was begun. Later in graduate study, and in teaching pharmacognosy, microscopy and pharmaceutical botany, additional observations were made with the definite purpose in mind of attempting to determine which of the botany courses was more adapted to serve pharmacy students. With this as a background, that is, training in both general and pharmaceutical botany, and microscopy, and having taught students under

both systems the writer would like to offer the following discussion.

A general knowledge of plants as a cultural asset needs no justification, and it is with this in mind that general botany is taught. For the pharmacist however, it becomes more than purely a cultural attainment, for he is interested in applying his knowledge in specific cases in order to safeguard his reputation in business by being able to judge accurately his crude drug materials. It is mainly for this reason that general botany is failing in its instruction to the pharmacy students, making it necessary to replace it with pharmaceutical botany and microscopy which are more suited to his particular needs. A statement of this kind calls for some supporting explanation.

For the most part the teachers of general botany are concerning their pharmacy students with too much detail of the lower divisions of the plant kingdom, which are all relatively unimportant as a source of medicinal plants that yield crude drugs. To be more specific in the matter it is like this. With the exception of the bacteria and their related products, which they study in detail in bacteriology anyway, the *Thallophytes*, *Bryophytes* and *Pteridophytes* are the source of scarcely a dozen medicinals of which but seven are official in either the U.S.P. XI or N.F. VI. It seems reasonable then to assume these divisions are not so vital to the pharmacy students as the *Spermatophyte* division which affords them hundreds of crude drugs. To be sure they should be studied, but it does seem justifiable and advisable to deal with them in accordance with their relative importance to the students.

Unfortunately this has not been fully appreciated by the general botanists, for a review of the writers original botany notes disclosed that nearly one half of the time spent on the course was taken for the study of the three lower divisions of the plant kingdom. This observation has been consistently substantiated by a careful check of the students who enrolled in pharmacognosy and microscopy after having taken their botany training in a separate general botany department. Almost invariably they possessed a more thorough knowledge of the divisions which were of least concern to them as pharmacy students. If this is really true, the whole situation sums up to this simple fact. A course in general

botany is compelled to serve a wide variety of students whose demands are entirely different. The botany teachers do not, or fail to understand the specific needs of the various departments they are serving, and even those who do, find it very difficult to offer a special course to each student group, so they generally offer the same material to all students alike. Exactly how the other departments fare under this plan is not known, but for the students of pharmacy, the writer has found it to be unsatisfactory.

Another criticism the writer wishes to offer in allowing other departments to teach pharmacy students their botany was encountered in teaching microscopy. The course was designed for students who had received their botany training in a separate department, and it was naturally assumed they would have their training in the fundamental plant tissues so they might proceed without delay into the details of their micro-analytical work. For this reason the microscopy was limited to two, three hour laboratories a week which would have been ample time for teaching the elements of the subject but for one thing. The botany course had failed to equip the students with any workable knowledge of the common tissues of the various morphological groups, so that it was necessary to teach them in the microscopy course, the essential information about plant tissues which they should have had. Understand it was not expected they should know particular diagnostic procedures or micrometry, but it was expected they would at least know the common tissues. Evidently a great share of their time was spent on taxonomy, a phase of botany which was far too advanced for them to comprehend anyway. As a result of taking the time from microscopy for teaching the tissues, very little time was left for microchemistry and the other actual accomplishments which the course was designed to present. The above represents only one instance, however, but no doubt there are many more similar ones. There is no justification for a situation of this kind, for it means the pharmacy course is obliged to assume this added responsibility for which it must sacrifice its own time or make no provision, under a set up of that nature.

Still more recently there has come to the writers attention another condition which if followed would prove of very little value to pharmacy students. The writer is familiar

with a botany laboratory method which is finding favor in the larger institutions; more particularly the practice of using mimeograph sheets of the plant parts which the student studies and labels from reference books. This method of course is adapted to instruction of large numbers with a minimum of laboratory facilities, but evidently it is not the type of instruction students in pharmacognosy need. They are eventually concerned with minute details of particular diagnostic tissues; and loose laboratory instruction like the above mentioned would be very inadequate. Moreover, the students are compelled to study plants with which they are totally unfamiliar, and for which there is apparently no particular use. Hence their interest is at a low ebb, and the result of it all is many low grades and a poor foundation in this subject.

When this type of instruction is compared with the definite and purposeful instruction of pharmaceutical botany, the possible advantages are most clearly appreciated. Pharmaceutical botany offers the pharmacy student personal attention from instructors trained in his own field, and familiar with his problems. Further, it affords the student the prerequisite work which is designed for his particular benefit, and so he is dealing with plants and crude drugs which have a definite medicinal value. It appears then, the logical place to include botany instruction for pharmacy students, is to make it a definite part of the pharmacy curriculum, and the subject to be taught by an instructor trained in pharmaceutical botany.

Development of Medicinal Plant Gardens

by LOVELL D. HINER

Division of Pharmacy, South Dakota State College

Medicinal plant gardens are a distinct asset to a pharmacy school, provided their development is such that they eventually accomplish the purpose for which they were established, i. e. to serve as a teaching adjunct for pharmacognosy and microscopy courses, and as an outdoor laboratory where research into various phases of drug plant cultivation may be carried on. The advantages of fresh material for the classroom is easily seen, but permit me to discuss the methods

that have been adapted at South Dakota for the scientific development of promising, climatically adapted medicinal plants.

The policy of attempting to collect large numbers of various drug plants, to the exclusion of other garden activities has been modified, with attention directed primarily toward a fewer number of plants in a concerted effort to really discover the species that may be of some economic importance to this particular section of the country. This has resulted in the elimination from the garden stock of many geographically unsuitable plants, the care of which naturally increased the expense of maintaining the plots. These plants have not been lost, for with the seed and plant exchange system maintained among the various gardens, a new start can easily be procured if it becomes desirable to again grow these species for some special reason. This is a definite advantage, for dispensing with these plants allows more time for the investigation of those that are hardy and desirable for cultivation. As soon as the success or failure of the acclimated plants are assured, new ones are added to the garden list in order to continue the development of new species for investigation.

Another possibility of expanding the facilities of a drug garden to produce something useful in the field of drug cultivation is its opportunity to cooperate with various outside departments with which it many times is closely associated. For several years, the South Dakota Division of Pharmacy has been cooperating with the Animal Husbandry department in the systematic investigation of chenopodium as a forage crop that has proven of special benefit to grazing animals, especially pigs. If this were attempted by either department alone, it would undoubtedly be more difficult to handle and certainly would be more expensive. The present system of the Animal Husbandry Department furnishing the pigs and the Pharmacy Department's medicinal plant garden supplying the chenopodium seeds and plants, has greatly simplified the investigation. Doubtless some other schools may be able to arrange similar projects, for the mutual benefit of all of the departments concerned. Federal research grants are available to encourage cooperative work of this kind.

Occasionally a medicinal plant garden will find an oppor-

tunity to be of service by diverting its resources toward the solution of some particular need in the immediate locality. To more clearly explain the point in mind, the writer has selected a typical example that recently has provoked considerable favorable comment.

Nearly everyone has heard of the so called, "Black Blizzards", but only those who have actually experienced them have any idea of the destruction of plant life they produce. Man and nature unknowingly conspired to produce these veritable, "moving acres" of blowing soil. First, with his plows, man destroyed the blanket of grass that covered the great plains, and then came the years of reduced rainfall accompanied by high winds that actually carried away the loose top soil. Not being content to wait for nature to control this erosion, a search was begun to discover hardy drought resisting plants that could be used to again bind the drifting soil. The medicinal plant garden suggested a possible solution.

Previously some *Ephedra sinica* plants growing in the garden had been set along the western fence in order to clear them from the more desirable garden plots. It just happened that the plot where the plants were set contained the poorest type of soil, and was the most wind-swept plot in the entire garden, and yet the outcome of it all was most gratifying. The other garden plants were fairly riddled by the blowing silt, but the ephedra emerged apparently unharmed. In the center of the ephedra plot very little erosion had occurred, for the spreading runners had developed a protecting sod, while those plants near the edges clearly demonstrated the hardiness of this species. In several cases the top soil was blown from the plants until only their lateral root development at the ends of their long taproots remained securely anchored in the ground. In spite of this the plants continued to thrive, and some actually produced viable seeds.

Arrangements for investigation were made, and a systematic bit of cultivation begun to hasten the propagation of these thrifty plants. In addition to providing a check on wind eroding soils, there remained the possibility of the drug also becoming a crop of some commercial value if the stems contained sufficient ephedrine. Data collected since the plants first attracted attention, shows conclusively that they are hardy and suitable, because of their growth habits, for plant-

ing to check wind erosion. Besides this, the plants produce sufficient ephedrine to make them commercially valuable, especially in times of emergency.

Within a very few years, South Dakota's medicinal plant garden should be in a position to offer to the state and to the nation, something worth while in the cultivation of drug plants.

A List of Vegetable Drugs for a Course in Pharmacognosy

KENNETH REDMAN

Department of Pharmacy, North Dakota Agricultural College

The advent of the U. S. P. XI and N. F. VI made it necessary to prepare our own list of vegetable drugs for Pharmacognosy.

In preparing the list, the various surveys and previous remarks were considered.

The following general rules were followed:

1. All official vegetable drugs are included, except a few highly toxic drugs, that we did not care to put out for general student use.
 2. The unofficial drugs which are sources of official drugs are included.
 3. Unofficial drugs given prominence in groups 1 to 5 of Basic Material for a Pharmaceutical Curriculum are included.
 4. Unofficial drugs in the primary list of the Pharmaceutical Syllabus and not conflicting with the other rules are included.
 5. Unofficial drugs given prominence in foreign pharmacopoeias and in previous revisions of the U. S. P. are included.
 6. Fresh drug samples are not included.
- The group comprises 217 drugs.

Teaching Laboratory with the Beginning Pharmacy Course

by INA GRIFFITH

School of Pharmacy, University of Oklahoma

It seems that there is some controversy as to whether laboratory should be taught with the beginning pharmacy course. This statement is upheld by the fact that the bulletins from forty-six colleges of pharmacy, which were consulted, indicated that laboratory work is not being taught with the beginning course in pharmacy in 34.7% of these colleges.

In my opinion laboratory work is essential with the beginning course and I shall give my reasons for this opinion. The course, as conducted at the University of Oklahoma School of Pharmacy, consists of two hours of lecture and two hours of laboratory per week. The work is designed so that material dealing with laboratory experiments has been discussed at least within the week before the experiment is performed. The assignments for the first two laboratory periods are library work. The students are asked to read and write summaries of the prefaces to the United States Pharmacopoeia, the National Formulary, the New and Non-official Remedies, the United States Dispensatory and the National Standard Dispensatory. During this time in lecture we are discussing the history of pharmacy, the pharmaceutical Code of Ethics and the important publications.

A manual has been prepared which our students use as their laboratory guide. The first experiments they perform are in metrology. The students make measurements of length, volume and weight in both the metric and English systems and from their results arrive at the relationships of these two systems. The remainder of the semester includes experiments on specific gravity, melting-point determination, evaporation, distillation, sublimation, desiccation and exsiccation, comminution, solution, decantation, filtration, clarification and decoloration and separation of immiscible liquids.

In the specific gravity experiment the students determine the specific gravity of a liquid with the Westphal Balance, hydrometer and pycnometer, thus, checking their results and observing some of the sources of error of the apparatus. Both the Fahrenheit and Centigrade thermometers

are used for the melting-point determinations showing the different range of the two scales.

The evaporation and sublimation experiments indicate to the students the different types of products that may be obtained, depending upon the control of the temperature. The students are required to separate as effectively as possible a mixture of alcohol and water by fractional distillation. They steam distil oil of turpentine and the aqueous-oleaginous distillate is kept in their desks for separation when the experiment of separation of immiscible liquids is performed.

The properties of deliquescence and efflorescence are revealed by observing the weights of materials possessing these properties both before and after exposure to air. The solution of solids is studied with particular reference to the methods of hastening it and the change of temperature which takes place in some cases.

The students prepare milk of magnesia and wash the precipitate by decantation. Finally, they decolorize a solution by allowing it to stand in contact with activated charcoal for a stated length of time.

Now, I feel that these and other experiments are valuable in the beginning pharmacy course because: *first*, they assist in the development of the student's technique. It is a well-known fact that students cannot develop technique by merely watching demonstrations. If the students are allowed to use their hands and correlate that use with their thinking they will acquire efficiency in handling more intricate apparatus that will be necessary in later courses. The students should be urged to use minimum quantities of materials which, of course, is an attribute to perfect technique.

Second, the purpose of this beginning laboratory course is to familiarize the students with processes and apparatus which they will use in later courses and finally at the prescription counter. We have found that this course serves as an introduction to the students and is a time-saver for them later when these processes and apparatus are employed. They must have an intimate acquaintanceship with laboratory technique and the way to gain that acquaintance is by actual employment and use of both processes and apparatus. My contention is borne out by this illustration from a leading pharmaceutical journal. It was said of a young man that

"an acquaintance with the courtship of Dante and Beatrice will do him good but it will be neither as illuminating nor so satisfying as an affair of his own."

Third, the laboratory work helps to create and hold the students in pharmacy. The answers of the students themselves to a direct questionnaire provide testimony as to the effectiveness of the course in this capacity. By necessity most of the curricula do not include more than the beginning course in pharmacy in the first year's work. Many of the students become discouraged in spending their time on what they consider unnecessary work.

The experiences gained by students in this laboratory course and their experiments with processes and apparatus more clearly illustrate to them the direct application of these subjects of the curriculum to pharmacy, and give them an insight to some of the things they may expect later.

The reasons for teaching laboratory with a beginning pharmacy course may be summed up in the words of the German poet, Christopher Martin Wieland—"However learned or eloquent, Man knows nothing truly that he has not learned from experience."

Newer Ideas in Teaching a First Course in Chemistry

by ELDIN V. LYNN

Massachusetts College of Pharmacy

All of you will agree, undoubtedly, that there is much opportunity for improving the results of teaching a first-year course in chemistry. In order to gauge accurately these results, naturally we must base our opinion on how well the **average** student is able to grasp the principles we are endeavoring to teach. On this basis, the writer is willing to admit that he is entirely dissatisfied with his own experience and undoubtedly many of you are of the same mind in reference to your own work. In any event, no one can deny that any change in method for the better is desirable.

One point which stands out most emphatically in the writer's experience is the confusion which ensues when

attempt is made to apply the theories of atomic structure. There is no doubt, whatever, that the ideas of electronic reaction represents a great step in advance and that they have brought science much nearer to the true explanation of what happens in chemical activity. Nevertheless, it is pertinent to inquire whether a detailed discussion of these should be brought into a first-year course. Is it necessary or even desirable to study the principles and practice of reactions in the light of atomic architecture?

After all is said, the crux of the question comes down to two points. The first would ask whether the fundamental chemistry has been altered by these newer ideas. To this there must undoubtedly be entire agreement that the reactions are exactly as they were before. Even the discussion of isotopes and of deuterium and heavy water need not involve any electronic explanation.

The second question, whether introduction of theories as to internal operation of reactions will assist the student to comprehend the points, is perhaps debatable. In the writer's opinion, however, the answer is not only negative, but also that such introduction gives just so much more for the student to understand and thus hinders instead of helping. From that point of view it would seem preferable, instead of basing the whole chemical edifice on known facts and hypothetical ideas concerning electrons and protons, as is done in many modern texts, rather to instill the facts and principles first and then note the theories of atomic structure at the end of such a course.

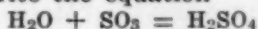
Personally, the writer would rather teach from a book published in 1900 than try to adapt the modern ones which attempt to follow fashions, and he is convinced that any of you will have more success with the **average** student in this way. Again let me emphasize that we are not considering the best ones in our class.

Another subject which should be introduced at this time is concerned with formulas and their relation to facts. One of the difficulties we meet is to impress the student with whys and wherefors for such substances as $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$, Na_5IO_6 , Na_3PO_3 , Na_3PO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$. We blithely proceed through nitric acid (HNO_3), sulfuric acid (H_2SO_4) and others like them and then hem and haw when we arrive at the

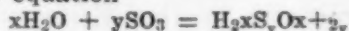
salts noted above. The result is that the student must commit such formulas to memory and never really understands. Then, when we come to the silicates and silicic acids, we simply give up; the substance like sodium silicate, $(\text{Na}_2\text{O})_x(\text{SiO})_{2y}$, are skipped over hurriedly or ignored entirely.

Actually the average student is much better able to understand common reactions if actual conditions are pointed out. Let me illustrate the contention by giving a few examples and by proposing some questions for you to contemplate.

When sulfuric anhydride is added to water, what takes place? We generally say that each molecule combines with one of water and write the equation



We call the product sulfuric acid and, if asked to define sulfuric acid, say H_2SO_4 . Yet we know that the hydration of SO_3 can lead to an indefinite number of sulfuric acids according to the equation



in which practically the only limitation is that x is never over three times y . Actually, no one can say, except on theoretical grounds, what individual compounds are in a solution of sulfur trioxide and water and it is much better to presume a mixture of some of the many possible sulfuric acids in equilibrium. When a base is added to the solution we get salts of one of them, but that does not alter the original liquid. On that basis, therefore, sulfuric acid is a solution of SO_3 in water, not H_2SO_4 .

The same remarks might be made about nitric acid or, indeed, of any hydrated, acidic oxide where the element concerned has a valence higher than one. Thus stannous acid, theoretically $\text{SnO} + \text{H}_2\text{O}$, might exist in solution as any one, or a mixture, of an indefinite number of compounds.

In view of these considerations, the student obtains a much better conception of acids, bases and salts if these ideas are taken up immediately after the subject of equilibrium and if both are introduced early in the course. It is very simple then, to show why neutralization of solutions of orthoboric or metaboric acids yields salts of pyroboric acid and why neutralization of meta-, pyro-, or ortho-arsenic acid leads to derivatives of the last only. Many other apparent anomalies are thus easily brought before the student with a

minimum of discussion. For example, the pharmacopoeial formula for ammonium molybdate is readily understandable, as also are the salts $K_2Cr_2O_7$, Na_5IO_6 , etc. Even the natural silicates in this way present no difficulties and one can easily see why commercial sodium silicate is not Na_2SiO_3 or Na_4SiO_4 but something more like $Na_2Si_4O_{10}$.

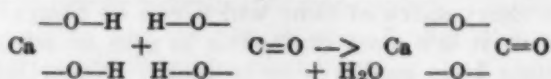
It is admitted that these considerations are not necessary with such salts as nitrates or many others. In the case of arsenates, arsenites, phosphates, silicates, etc., however, we must either ask the student to memorize the formulas without any discussion or else adopt the more logical method of explaining why. If this explanation is to be given, why not put it in early and let it apply throughout?

A great aid in impressing the reasons for such compounds on the average student is the use of structural formulas and the insistence that he also use them. Indeed, it would seem best to develop the structural idea right along with the molecular formula and for the teacher to employ generally nothing but structures in the discussion. Perhaps the student will in this way have less difficulty with organic formulas when the time comes. The argument might be made here that we should not burden the beginner with more material, but is contended by the writer that if structural formulas are used in practically all cases, the student will not have more material and will have much less difficulty in understanding the whole.

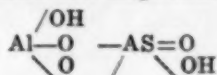
One outcome of such instruction is to show the actual chemical identity of acids and bases, except in the matter of degree. The bases are usually written $M(OH)_x$ which is exactly the same as completely hydrated acids, usually $H \cdot MO_x$, while the common acids are $HyMO_z$, or dehydrated products of the above. In other words, the theoretical addition of water to an oxide, one molecule at each oxygen atom to yield two OH groups, gives a compound which may act as an acid or as a base or as either. Thus, As_2O_3 gives $AsO(OH)$ or $HAsO_2$ and $As(OH)_3$ or H_3AsO_3 , as well as many other hydration products. We generally refer to them as arsenous acids but they are typically amphoteric and act as bases if placed in contact with strong acids.

Another natural result of using the method outlined is to explain partial and complete hydrolysis of salts. The salt is obtained by dehydration between two apparently similar

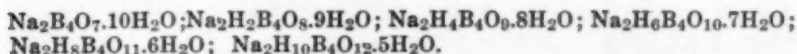
substances which we call acid and base, respectively. Thus calcium carbonate is formed by the reaction



The complete hydrolysis gives back these substances, or reverses the reaction. On the other hand, incomplete hydrolysis splits off either some acid or some base, depending on whether the basic element or the acidic element has the higher valence. The products are then basic salt or acid salt. If the valence is the same, no partial decomposition is probable. Thus, tertiary sodium orthoarsenate, Na_3SO_4 , might give NaOH and Na_2HASO_4 (an acid salt) while aluminum metantrate, $\text{Al}(\text{NO}_3)_3$, might yield HNO_3 and $\text{Al}(\text{NO}_3)_2\text{OH}$ (a basic salt), and aluminum orthoarsenate, AlAsO_4 , would be hydrolyzed completely or else produce the improbable product



There is just one more point to be raised, having to do with formulas of salts as written. We give NaBO_2 , Na_3BO_3 and $\text{Na}_2\text{B}_4\text{O}_7$ for sodium metaborate, sodium orthoborate and sodium pyro (bi di tetra) borate, respectively. Since the last contains ten molecules of water of crystallization, why could it not be any one of the following:



Of course, any further incorporation of the water is incompatible with a valence of three for boron. On the other hand, $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$ is the formula given for sodium biphosphate U. S. P. Why is it not $\text{NaPO}_3 \cdot 2\text{H}_2\text{O}$ or even NaH_4PO_5 ? A still more striking illustration is given by $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}$, the formula accepted for ammonium molybdate. According to this it is a salt of $\text{H}_6\text{Mo}_7\text{O}_{24}$, one of the possible myriads of molybdic acids, but it might just as well be a salt of $\text{H}_8\text{Mo}_7\text{O}_{25}$ or $\text{H}_{10}\text{Mo}_7\text{O}_{26}$. From analytical figures on the composition of salts which contain alleged water of crystallization, it is impossible to say just what is the formula. Even those which contain no water of crystallization are not necessarily fixed; for example, KClO_3 , or K—O—ClO_2 could just as logically be $\text{K}_2\text{Cl}_2\text{O}_6$ which can be written structurally in several ways. Only determinations of molecular weight would

tell and this is often impossible or impracticable and certainly is not frequently done.

In the short space of time which can be assigned to this presentation, it is almost impossible to give an adequate idea of the points I am endeavoring to make. Nevertheless, it is hoped that sufficient has been noted so that you will have gained the chief ideas and so that considerable free discussion will follow. The principal object in presenting this paper is to elicit such discussion.

Women in Pharmacy

NELLIE A. WAKEMAN

Course in Pharmacy, University of Wisconsin

Having been for quite some time a woman engaged in a pharmaceutical occupation, I have, naturally, long been interested both in women pharmacists and in the opportunities offered to them in the various lines of pharmaceutical activity. It is doubtless for this reason that Dean Lyman asked me, a few days ago, to write something on this subject for the *American Journal of Pharmaceutical Education*.

As I did not attend the meeting at Dallas last summer, until I received Secretary Cooper's letter relaying President Crockett's request that I serve upon the new special committee on the Status of Women in Pharmacy, I had always looked upon the problems of women in pharmacy as those of the women themselves and not of the profession in general. It appears now that the number of women students entering colleges of pharmacy is increasing, that in the year 1935 out of a total of 2347 new students entering the colleges a little over ten per cent were women, and the matter now becomes a problem of major importance calling for the creation of a special committee to study it. I say of major importance because, in the report of the Executive Committee, as printed in the *American Journal of Pharmaceutical Education*, out of eleven pages discussing the problems affecting pharmacy as a whole, two pages, lacking a few lines, are given over to the question of women in the profession.

I accepted an appointment to this committee with alacrity, not so much because I was convinced of the importance of

the matter, as because, if there is a problem here to be discussed, I from my long experience as a woman in pharmacy and from my intimate contact with women pharmacists, both in and out of college, I should have something of value to add to the discussion.

In my work with students of pharmacy I have always looked upon them neither as women nor as men, but as students, and I have tried to judge them according to how well they accomplish whatever they are expected to do. If they make good, that is what we expect of them; but if for any reason they fail, being women does not excuse them, and being men does not justify their failures. In college work women and men are more nearly on a par so far as opportunities go than they are likely to be in real life. But even as college students men have the best of it. They have the advantage of physical strength to say nothing of the traditions and practices of our man made institutions, ordained by men for men. Notwithstanding their disadvantages women are able to hold their own with men as students of pharmacy.

On my desk before me there is a copy of a report for the second semester of 1935-36 compiled by the office of the Dean of Men of the University of Wisconsin, from which a few statistics are here taken. I am not unaware of the fact that statistics may be made to prove almost anything. These figures, however, coming as they do from a source prejudiced in favor neither of women nor of pharmacy students, may be of value in comparing the standing of women pharmacy students not only with men in the same courses, but also with other students in the University.

During the semester under consideration there were enrolled in the University of Wisconsin 7266 undergraduate students. They attained a grade point average of 1.546. Of these 95 were pharmacy students with a point average of 1.584. Of the 95 Pharmacy students 74 were men and 21 women, considerable more than the 10 per cent included in the United States at large. The 74 men students in pharmacy earned a point average of 1.568 and the 21 women students of 1.645. So much for the ability, and the success, of women as pharmacy students at one of the colleges of pharmacy.

After leaving college, women are at a greater disadvantage

than as students. In the first place it is more difficult for them to get jobs. But that is not a problem peculiar to pharmacy. In every occupation in which women come into competition with men the same condition prevails. In many professions it is even worse than in pharmacy. This is a problem which women everywhere have to meet. They expect it and their expectations are fully realized. This problem women are slowly solving for themselves, grateful, however, for whatever help or encouragement they receive from others. And they will, increasingly, continue to do so if no greater obstacles are placed in their way. The best advice that can be given to women in pharmacy, or in any other occupation which men find desirable, is to prepare themselves as completely as possible for the work they are to perform. Whenever a woman comes into competition with a man, she must not only be as good but considerably better than the man who wants the same job. Even then the chances are about ten to one that it will be given to the man, and if the woman does get it, her salary will probably be less than that paid to men for the same work, moreover, arrangements are sometimes made that whatever of honor or credit accrues to the position will be directed to some male superior, or colleague.

Now let us consider briefly the nature of the difficulties in the way of women seeking desirable positions. First, there is the age old superstition of woman's inferiority to man in all occupations except those indicated by the Kaiser's three Ks, "Kirche, Kueche, und Kinder." Deny it as they may, most men and not a few women are still bound by this superstition. Next, there is a solidarity among men, sort of a loyalty of man to man, which resents woman's intrusion into fields so long held by men alone. As competition increases, this feeling increases, and it is this which so frequently results in the employment of a man, clearly inferior in every respect, in preference to a better qualified woman. Finally there are the limitations as to hours of employment, placed, both by law and by custom, upon women, indiscriminately, in work outside the home. These restrictions, imposed by a well meaning, but sometimes thoughtless, public, while intended for the protection of women, frequently work a real hardship upon them.

After the woman pharmacist has been educated and has

secured her job does she make a good pharmacist, does she serve the public acceptably and adequately, and is she, herself, injured by the work? Here I may be permitted to quote from the Report of the Chairman of the Executive Committee: "I believe we all agree that pharmacy is a profession in which women can very well take the place of men, except perhaps in the heavier work connected with a commercial store. However, in most stores this heavier work is done by a janitor, so that this objection is not valid."

Now that we have a special committee to continue the work begun by Dean Jordan, what shall this committee do? That, of course, is for the chairman to decide. A few suggestions as to lines this investigation may well follow have been made to me by others interested in the matter though not members of the committee. Among these suggestions are the following: The study as to numbers of women in pharmacy should, if possible, cover more than five years, ten would be better in order that it may include more than the so called depression years. It should go not only into the number of women entering colleges but even more carefully into those graduating, and those graduates who actually enter pharmaceutical occupations, and how long they remain in this work. The number of graduates who go into positions already waiting for them may also well be taken into account. Daughters of pharmacists who enter their father's stores, and Sisters of Charity who become pharmacists in the hospitals of their orders surely create few problems for the profession as a whole. These are some of the considerations which may substantially reduce the ten percent of women pharmacists with which the profession is now faced.

After all these things have been taken into account, should there prove to be a full ten percent, or even greater number of women in pharmaceutical pursuits, in this necessarily, so long as they are good citizens and good pharmacists, a calamity? Some one, it is stated in the report of the Chairman of the Executive Committee, has objected to the employment of women on the grounds that he cannot use them to close up his drug stores after eleven o'clock at night. If there were twenty percent, or even fifty percent of women pharmacists, there would yet be men left to do this, should that undesirable necessity still exist. As a matter of fact, isn't the keeping open at all hours of night a greater evil than the presence of women in the profession?

The entrance of women into pharmacy, as, indeed, into all occupations, is but a part of a great world movement for the intellectual, political, and economic emancipation of women. We are now in the third, and in some respects the most difficult, phase of this movement, one in which each woman has to work out her own individual salvation. This part of the movement, like the others, will go on. Difficulties placed in its way retard, but they will neither discourage nor stop it. Just as women have won for themselves a fair measure of educational and political equality, they are now struggling to gain economic equality, the right of every woman to earn her own living in her own way. And when this right has been once attained, have no fear, it will not be abused any more than have been those other rights so dearly won.

In discussing the question of women in Pharmacy, Dean C. W. Johnson of the University of Washington, says—Women have had to fight for everything that the sex has gained, in the nature of equality with men, in political, social, and professional life. They have been in pharmacy for many years with about the same range of success as men, hence at the present time they present no new problem. For many years the University of Washington College of Pharmacy has had from ten to twenty per cent women students hence the problem (?) of women in pharmacy is not new in this state.

There has been little difficulty in placing women graduates in work they are prepared to do. A considerable number of druggists in the state of Washington ask for women graduates when help is needed. Some of the leading prescription stores of the state use women pharmacists largely, and insofar as is known the pay ranks well with that given to men of the same experience. Hospitals almost invariably use women in the pharmacy. Some women go on with graduate work or complete the required courses in education and find employment as science teachers in high schools.

The same conditions apply in finding employment for women as for men. The question of personality is of prime importance. Is the individual woman (or man) of attractive appearance, does she dress neatly and modestly, and has she the ability to lead people to have confidence in her work? If the graduate has these traits fairly well developed and if the faculty of the college can say that she is honest, accurate, industrious, and willing to serve both the public and her employer, there is no question of employment within a reasonable time after graduation. In general, women rank well with men in intelligence and in ability to complete a rather difficult course requiring long hours in the laboratory and careful preparation of classroom work.

There is another point, however, regarding pharmaceutical edu-

cation that should be mentioned. Let us assume first, that the high school graduate, man or woman, is interested in science. If this interest centers in either the physical or biological sciences what course touching these subjects is better for the student than a well-organized pharmacy curriculum? Will any pharmacy teacher admit that he cannot conduct his classes so as to impart cultural as well as professional instruction? Must a subject be strictly non-informational to have cultural value? Certainly science teachers will insist that their subjects do have both informational and cultural value. The subject of pharmacognosy for example, will lead the student to a broader viewpoint of nature. The student in this subject will learn something of geography, commerce, mythology, history, of plants as sources of interesting constituents and when this knowledge is properly organized he has gained some culture as well as necessary and useful information. Other subjects in the pharmacy curriculum can be made just as interesting as well as of practical value in earning a living.

Granting that a graduate in pharmacy does acquire culture as well as practical information then why not assume the same attitude as teachers in liberal arts colleges in regard to employment. The liberal arts college does not worry about placing graduates. It tries to train and develop the mind of the individual and thinks little of some special position. The college of pharmacy, therefore, not only opens the possibility of definite employment but also does everything else for the student that any other type of curriculum can do. Let me repeat that the student should be interested in science, and if so why worry about employment.

Women in general think of marriage as their ultimate career. If again the woman is interested in science, will any other science course better fit her for the home than training in pharmacy? The fact remains that a woman graduate in pharmacy is as well prepared for her life career, be it what it may, as any other type of science graduate. The faculty of a pharmacy college will usually try to find employment for all of its graduates but it should not worry about employment or discourage women from entering as students. The main thing is to give fundamental instruction that will develop the student and leave the question of employment in the background.

Professor Ina Griffith of the University of Oklahoma comments as follows—In Oklahoma our women graduates have not presented a special problem. The women graduates of the School of Pharmacy average about ten per cent of the graduating classes. They have found places in practically every branch of the profession. They go into the retail business as successful proprietors of stores and as pharmacists. They are in hospital pharmacies, both in the drug dispensing and technician departments. We include in our curriculum training for technicians and our women are interested in it, as well as capable. Our women graduates are also filling positions in technical drug laboratories and in the teaching profession. In Oklahoma the supply of women has never caught up with the demand.

The Interallied Professional Association of South Dakota

CLARK T. EIDSMOE

Division of Pharmacy, South Dakota State College

That unified effort will accomplish results is ably demonstrated by the recent action of the South Dakota Legislature in enacting into law the bill providing for the testing of cattle for bovine tuberculosis. This measure was strongly supported by the Interallied Professional Association of South Dakota, an organization which comprises the medical, dental, pharmaceutical, nursing, veterinary, and hospital associations of the state, and the fact that there was practically no opposition to its passage in either of the Legislative Houses testifies to the powerful influence which the Interallied Professional Association is able to wield.

This is not the first time that a bill providing for testing for bovine tuberculosis has been before the South Dakota Legislature, but it is the first time that such a measure has had the undivided support of all of the recognized branches of the healing art. In other years support of some of these branches was frequently lacking, or so indifferently directed that opponents of the program had little difficulty in convincing legislators that the measure was one which was being advocated by a very small group who hoped to reap benefits to themselves by its passage. How different was the reaction in the present instance! Faced with the knowledge that all of the Associations of the healing art were solidly behind the measure, legislators lost no time in pledging themselves to its support.

Let it be understood that passage of this measure was not secured by any threat of reprisals or pure show of force. Educational rather than coercive methods were employed. Able representatives of the Association in every county were chosen to present the matter to each senator and representative before he left his home for the legislative session. The advantages of such a law to the general public were carefully explained so that the legislator was convinced that it was a measure designed to safeguard the public rather than one for private gain.

As an added feature of this educational program the

Interallied Association was able to secure the services of Dr. J. A. Meyers, Professor of Preventive Medicine of the Medical College of Minnesota University, to give lectures in several of the principal cities of South Dakota on various phases of the tuberculosis problem. Dr. Meyers appeared before student bodies of several of the State's institutions of higher education, civic organizations, and district meetings of the Interallied Professional Association, and without doubt the information which he presented had a large share in the moulding of a public opinion favorable to the proposed legislation.

The aim of the Interallied Professional Association is not only to secure the passage of legislation, although that in itself would be a sufficient justification for its existence. Its objects are stated in the constitution of the Allied Council:

- "(1) To promote the science and the art of the practice the aforesaid professions in so far as they affect the progress, the development and the practice of the healing art in the state of South Dakota.
- (2) To lend support to the program of such other health agencies as are in any way engaged in the control or eradication of any contagion which endangers human life.
- (3) To cooperate with such state and government agencies which have for their purpose the dissemination of public health information which is designed to improve the standards of living within the commonwealth of South Dakota."

The policies of the Association are governed by a Council which is composed of two representatives from each of the member associations. The permanent organization was completed at a meeting of these representatives in Huron, South Dakota, September 3, 1935.

In order to bring the benefits of the Interallied Association to as many as possible of the individual members of the six professions represented, provision has been made for the division of the state into twenty-two districts, and for the establishment of an active organization in each district. Meetings have been held in ten of these districts, and organization of the remaining districts is being carried on as rapidly as possible.

The district meetings have been very well attended, and

it is believed that definite progress has been made in bringing these related groups into a closer association with each other and in fostering a cooperative spirit which without question must operate toward an improved service to the public as well as toward more agreeable conditions for themselves. At least four very noteworthy results are being achieved by these district meetings:

- (1) They afford an opportunity for the members of the various professions to become acquainted, not only with members of the other professions but not infrequently with even those of their own association.
- (2) They permit the discussion of policies which affect all groups and in this way aid in eliminating friction which might otherwise arise.
- (3) They provide for the dissemination of information which is of vital interest to all of the professions.
- (4) They enable each group to arrive at a better understanding of the contribution made by each of the other professions in the control of disease.

The Interallied Professional Association of South Dakota is the first successful attempt in the United States to bring together into a state wide organization these closely related groups whose common purpose is to work for the alleviation of suffering. Its progress will be carefully followed and studied by members of the professions in other states who are always interested in any program designed to promote a closer union of these naturally interdependent groups. Although much still remains to be done, leaders of the movement in South Dakota are firmly convinced that already sufficient good has resulted from the establishment of the Association to much more than justify the effort expended in effecting the organization.

Much of the credit for the success of the movement must be given to Dean E. R. Serles of the Division of Pharmacy, South Dakota State College, who not only has had a large share in the establishment of the Association, and in the formulation of its policies, but who has also been tireless in his efforts in the organizing of the district groups.

Hospital Pharmacy

LOUIS C. ZOPF
University of Iowa

For many years hospital pharmacists have been active in the Section on Practical Pharmacy and Dispensing of the American Pharmaceutical Association. The establishment of a sub-section provides a specific place for the discussion of problems directly related to this branch of pharmacy.

Increasing demands are being made of the Hospital Pharmacist. His basic training must be of the best. His knowledge of newer products and research progress must be up to date. This increasing demand may be a natural evolutionary process, but the stand taken by the American Colleges of Surgeons in their minimum standards for a Hospital Pharmacy and the editorial in "Hospitals", *Journal of the American Hospital Association*, have helped much. As early as October 1932 a resolution by the Council on Medical Education and Hospitals of the American Medical Association evidenced a need for adequate supervision of Hospital Pharmacies. The resolution as adopted was, "Resolved: That a change be inserted in the 'Essentials of a Registered Hospital' requiring that the pharmacy of a hospital should be adequately supervised and should comply with state laws".

Who is concerned in this problem of the hospital pharmacist? The answer, I believe, is first, the hospital pharmacist himself—second, the teachers in our colleges of pharmacy—and third, the other members of the pharmaceutical profession.

The hospital pharmacist must use a bit of introspection and without prejudice analyze, first, his adaptability for this type of work—second, his qualifications for the tasks he is required to perform—third, his ability to work with medical men and that without an inferiority complex—and fourth, the completeness of the service he extends to the hospital. There are other important factors, but these appear as paramount. They must and can be answered by the hospital pharmacist.

The colleges of pharmacy have a vital part in the developing of better hospital pharmacists and pharmacies. Whenever possible colleges should have a connection with a hospital where their students can obtain some experience in hospital dispensing. This pharmacy should be under the

supervision of a registered graduate pharmacist who is approved by or is a member of the staff.

Sufficient training in hospital pharmacy should be made available to all students so they may determine whether they desire this branch of pharmacy as their life's work. Such training is essential and fundamental. All students of pharmacy, regardless of their future intentions, can profit by such a course.

Duties of the hospital pharmacist vary with the size and type hospital he serves. Some are required to do bacteriological and pathological work. Others are kept busy with the compounding and dispensing. Some are requested to assist in the instruction of materia medica for nurses and to offer assistance to internes in prescription writing. Detailing the medical staff on U.S.P. and N.F. preparations and assisting in formulary specifications are very important essentials. Many are required to purchase drugs and supplies and therefore must understand methods of stock control and storage. These and many other special duties are going to require that graduate courses be offered in such subjects, for as the demands increase so must the ability and quality of the pharmacist advance.

The opportunities for hospital pharmacists are increasing. We have more hospitals, people are overcoming the hospital-shy attitude, doctors in the country towns no longer perform their surgery in the home or office, but seek the facilities of a hospital. Opportunities for research and cooperation with other health professions are many. The equipment of the modern hospitals with their constant nurse-care and resident physicians, their diagnostic laboratories and X-ray equipment mean but one thing—graduate registered pharmacists must be on duty to properly prepare and dispense medication for these patients.

The wards and laboratories require routine pharmaceuticals and chemicals. Parenteral solutions must be prepared and sterilized. Hospitals are requiring adequate supervision of their pharmacies. They should have had it long ago. Internes and nurses have a definite place in the hospitals, but not in the pharmacy.

As to other members of the profession, it is evident that through hospital pharmacy we have one of the strongest links with our allied profession, medicine. This tie can be

strengthened or broken depending upon the type of people we have representing our profession in this field. The best people are needed, but they must be backed by a profession consisting of men and women representing pharmacy at its best. Every individual is a representative and it is necessary that each conduct himself so that no reflection may be cast on the profession.

Retail pharmacists are realizing that if their businesses are to survive they must get back to professional pharmacy. This move will strengthen the standing of our profession. It will rebuild a confidence in the public and present a definite need and service to the medical profession.

Much ground work is necessary for the building of a strong organization. In this direction we have attempted to advise all hospital pharmacists about the establishment of this sub-section, but it is possible that many were not reached for a complete list of pharmacists so employed was not available.

I wish here to take the opportunity to thank the deans of the colleges of pharmacy for their cooperation in supplying a list of their graduates so employed.

Our program at New York will be composed of papers dealing with the every-day problems of hospital pharmacists, and in addition we hope to have an expression from the Pharmacy Committee of the American Hospital Association as to their needs in regard to pharmaceutical service. Further it is expected that some interesting information will be supplied in regard to hospitals now entirely without pharmaceutical service. Another important point for consideration is that of working out the details of the minimum standards for a hospital pharmacy. These problems require that all pharmacists become active and take an interest in this work for certainly we have taken a big step forward, and through cooperation with the American College of Surgeons, American Hospital Association and American Medical Association we have a marvelous opportunity for the extension of pharmaceutical service.

Dean Edward Spease, Dr. E. F. Kelly, Mr. H. Whitney and others are taking an active part in this sub-section work. We are encouraged with the interest shown by Hospital Pharmacists and others.

A Graduate Course in Hospital Pharmacy

LEROY D. EDWARDS

School of Pharmacy, Western Reserve University

The recent developments in hospital pharmacy have been extensive and rapid. The American College of Surgeons and the Catholic Hospital Association of the United States and Canada have adopted "Minimum Standards for a Hospital Pharmacy."¹ The American Hospital Association appointed a Committee on Pharmacy during 1936; a like committee will function during 1937. The American Pharmaceutical Association has established a sub-section on Hospital Pharmacy. These steps all point to the immediate future development of pharmacy in the hospital, and definitely offers one interested in professional pharmacy an opportunity for action.

Immediately, a number of questions present themselves. Will the present day pharmacy school graduate be able to meet the requirements as this movement grows? Will the hospitals of the future ask for better trained pharmacists? If so, what will be the source of these better trained pharmacists? Since there is no place in the field of pharmacy where the need of properly educated and trained men is more essential, it stands without question that the hospitals will demand the highest type of pharmacist available. The answer to the question as to the source of these men is, for the moment, most difficult.

Some have already advocated that the education of the hospital pharmacist should more closely approach that of the physician. Such a hospital pharmacist, especially those in teaching hospitals and in hospitals associated with universities will be expected to produce pharmacy's share of research. He must be equipped to manufacture pharmaceutical products of all kinds on a scale large enough to satisfy hospital needs. He must be able either to do or to direct the analytical work necessary in standardizing his products both chemically and biologically. In a hospital that does not maintain a bacteriological laboratory he must be prepared to make many tests and checks, and where one is maintained, he must know wherein it is useful to his work. Certainly he will be called upon to prepare the many stains used in biological and diagnos-

¹Bull. Am. Coll. Surg., Oct., 1936, vol. 21, p. 202.

tic tests. He must have a knowledge of drugs and supplies that will qualify him to form specifications for buying even if he does not perform the act of buying. He must be familiar with the use and availability of professional supplies, i. e., instruments, rubber goods, gauze, etc., to the end that the nurse and the surgeon have at hand all needed equipment. He must be able to prepare and sterilize parenteral medications. He must be acquainted with all the departments of a hospital and their functions in order that he may know exactly where the pharmacist fits into the whole. With such a background, he will better understand the physician's work and needs—he will truly become a physician's helpmate. And, above all, he can be given the proper recognition which is so necessary for the future progress of hospital pharmacy.

Throughout the present school year the staff of the School of Pharmacy and the Pharmacist of the University Hospitals of Western Reserve University have given this problem considerable thought. As a result of this work a list of courses available to those who wish to do graduate work with a major in hospital pharmacy has been submitted for publication in our Graduate School bulletin of June 1937. Such a student may select courses in analytical pharmaceutical chemistry. He may serve in the several departments of the hospital pharmacy which is composed of a large out-patient department filling 65,000 prescriptions annually, a utility drug corridor, the pharmacy proper, the professional stores, and the parenteral solution room. He will have the opportunity to receive instruction in bulk hospital manufacturing and control work as carried out by the laboratories located in the School of Pharmacy. In addition many related courses such as biochemistry, bioassays, microscopy, problems in compounding, pharmacology, bacteriology, etc., will be available.

Such a program as outlined above is made possible by the fact that the School of Pharmacy of Western Reserve University is responsible for the conduct of the pharmacy and enjoys the sole privilege of pharmaceutical research in The University Hospitals of Cleveland.

Contacting Our Druggists

LAWRENCE H. BALDINGER

Department of Pharmacy, University of Notre Dame

One of the important functions of a university and of the separate units which comprise it is to serve the surrounding territory whenever possible, even though the individuals who ask for help are not graduates of the institution or have not attended classes in any university. Each individual unit of a university is best equipped to serve those whose interests are closely allied to the work of the unit. This function of a university is not easily impressed upon some individuals nor is it always easy for faculty members to break down barriers which academic standings seem to create in the minds of many people. Furthermore a graduate of another school often shows a reluctance to contact the university in his neighborhood, a reluctance borne of undergraduate loyalty to his alma mater and fostered through later life.

Schools and colleges of pharmacy in general have exhibited a keen interest in contacting their own graduates, either through the alumni associations of the universities, or through journals and other publications sponsored by the school for the students and alumni. A number of schools have contacted the general public by means of "open-house" nights. In some cases the entire university has sponsored this plan, in others only certain departments resort to its use to acquaint the public with the work that is being done. Suffice to say it has done much to acquaint the general public with the trends in higher education.

All of which leads to the problem of contacting all of the druggists within a reasonable radius of the respective schools. While some druggists will be interested in a general "open-house" the majority would prefer to meet with members of their own profession to discuss their own problems and to hear talks of a scientific nature, yet not so technical as to be worthless from a practical standpoint. Naturally the question arises as to the best practical method of acquiring these contacts with the corner druggists who seldom visit the school from which they were graduated and still less the school in their own neighborhood. While a professional interest in pharmacy on the part of the druggist is to be preferred as a result of these contacts, it is often

necessary to resort to inducements of a social or commercial nature as wedges for the introduction of professional viewpoints.

Rather than to adopt the attitude that the druggists are the only ones to benefit by contacts with the schools, each individual teacher should consider the advantages which will accrue to him and the institution he represents by these informal and personal meetings. No matter how much we should like to discard all vestiges of commercialism in the profession today and to place our graduates in strictly professional stores we must admit that the average drug stores are absorbing a large proportion of our graduates and are furnishing incoming freshmen to replace the graduates. Professional attitude is paramount to pharmacy today but it must be supplemented with a common-sense attitude concerning present-day conditions in the drug world. The common criticism voiced by the average druggist toward the educator is that he is too impractical, that to stand before a class and lecture on professional pharmacy is entirely different from putting these professional aspects on a monetary basis. The American Council on Pharmaceutical Education has suggested that a certain fraction of the faculty from each school of pharmacy be registered pharmacists. It is unfortunate that a clause has not been appended suggesting recent practical experience in addition to registration. Being a registered pharmacist does not necessarily imply good teaching ability in the present day pedagogic problems of pharmacy. For the good of all concerned, the educator must get down to the level of the average druggist, see and investigate his problems, and then intelligently formulate practical plans to lead him, not drive him, to true professionalism.

While he realizes that many changes have been made in academic standards since he left school, the average druggist has a very hazy idea of the nature of these changes and, as long as he is not seriously inconvenienced by them, is perfectly agreeable to added courses or new requirements. Should these academic changes, however, infringe upon his own personal comfort by requiring more time and energy from his clerks, or if newer board rulings should increase his overhead by requiring extra pharmacists, he will very quickly develop an unfriendly attitude both toward the schools and

the boards. In this attitude he often harms the profession by his grumbling and criticisms within earshot of the general public or of his younger clerks. In spite of the efforts of the American Association of Colleges of Pharmacy to align courses in the various schools a wide variation still exists in the educational program offered to our would-be pharmacists. Older pharmacists and even some educators in the profession are often caustic or, at best, apathetic in their remarks concerning courses in physics, mathematics, philosophy, foreign language, history, and other subjects which have been placed in the curricula of some schools to more clearly differentiate between a technically trained clerk and an educated pharmacist. In this day of over-emphasized commercialism and materialism it would be an important step if we could instill into or impress upon our druggists a true appreciation of those factors which aid in the development of a professional point of view. No matter how enthused the young graduate may be in his desire to do his bit in promoting professional pharmacy, his enthusiasm will wane under the caustic comment of a disgruntled druggist who has long since forgotten how to evaluate the worth of his employees except in terms of dollars and cents. No one will deny the importance of a sound financial policy in the management of a drug store; in connection with this point we must admit that many of our more recent graduates, because of inexperience, are not as valuable for the first few months of their employment as pharmacists as others who have worked in drug stores while or before attending college. It is the duty of the schools, therefore, to contact these druggists in some manner to acquaint them with changing academic standards and to ask for cooperation and patience in completing the training of the young men in their employ.

A number of methods have been tried for contacting druggists. In the larger centers the faculty and students of the student sections of the American Pharmaceutical Association meet with the druggists. This, however, presupposes that the druggists are association conscious, which is not true in all cases. We have already mentioned the school journals which serve as links between the school, the students, and the alumni. Some schools publish and distribute to all stores in their respective states bulletins of a professional nature. Certain state schools sponsor an annual

business conference sometime during the winter or spring months. Commercial organizations with the aid and counsel of prominent educators sponsor from time to time extensive promotion of the profession. State boards in certain states, also with the aid of certain schools, may set up standards for drug stores qualified to give proper apprentice training to graduates. While we may be tempted to criticize the seeming radicalism of these standards and the coercion of their enforcement, we must admit that the enactment of these standards has been a step in the right direction for the promotion of true democracy.

It must be admitted that many of these methods are producing results. Evidences of increasing professional spirit can be seen in remodeling plans, in the increasing number of open-view or semi-open prescription departments, and in the efforts of the druggists to detail other professional men. Perhaps some of us, especially in the younger group, have been impatient and are expecting overnight changes in a condition which had its inception in the early twenties and was fully matured before the educators and legislators were able to take a drastic step, that of requiring the four-year course and better apprenticeship, in order to remedy the situation.

Four years ago at the University of Notre Dame a plan was initiated to promote a closer affiliation between the druggists of South Bend and the surrounding territory and the Department of Pharmacy. With the aid of the students' pharmacy club of the University a scientific program was arranged, keeping in mind the fact that many of the druggists would not be prepared for talks of a technical nature. The druggists' club of South Bend was invited to attend a joint dinner with the students of the department in the university dining halls. Following the dinner the scientific program was presented in the laboratories and both the faculty and the students were well repaid by the interest taken by the druggists. The success of the party prompted a repetition in each of the years following. This year's party climaxed all previous meetings. Invitations were extended not only to the druggists and their clerks, but also to salesmen and representatives of wholesale houses and manufacturing companies. Small amounts of merchandise to be used as door prizes were solicited from each of the manufacturing

and wholesale houses serving the South Bend territory. As a result of the generous response to this solicitation very few druggists left the party without a substantial amount of merchandise, in many cases worth more than the amount paid for the dinner. Included in the list of guest speakers for the evening were the Dean of the College of Science of the University, a member of the Indiana State Board of Pharmacy, the president of the Indiana State Pharmaceutical Association, the mayor of a neighboring city, and the Head of the Chemistry Department of the University.

Following the dinner the group proceeded to the laboratories of the Department where the students had arranged four contests for the druggists. One involved the identification of ten crude drugs, another the correct chemical names for ten common chemicals, another the identification of ten full-page advertisements and the products represented by them, and the last contest the identification of ten slogans used by drug and manufacturing houses to advertise their products or their services. The interest taken in these contests and the amusement afforded by them more than repaid the committee for the trouble to arrange them. Following the contests a short scientific paper was presented by a graduate student of the department, after which the contest prizes were awarded, the remainder of the door prizes were distributed, and the meeting was adjourned.

It is questionable if a meeting of this kind would be applicable in all schools. Local circumstances, personal prejudice for or against this kind of publicity, cooperation of local druggists, are a few of the factors which must be considered in planning an affair of this kind. It is hoped that this plan may suggest newer and better methods of contacting our druggists, or ways and means of bringing them back to a true appreciation of the work of the schools and boards, and to a realization of the work they can do in promoting true pharmacy.

Report of the Committee on Professional Relations

The work of a Professional Relations Committee of the American Association of Colleges of Pharmacy offers the colleges of pharmacy of this country a splendid opportunity to advance the scope of the professional service of the American pharmacist.

In some respects the college group can pioneer a little more convincingly for they only can make valuable contacts with organized medical groups, but the approach is instantly seen to be devoid of any commercial aspect. There are at least twenty-one colleges actively engaged in such pursuits. Among their activities are supplying speakers for medical meetings, conducting courses in prescription writing for medical and dental groups, arranging scientific displays for local, state, and national medical and dental meetings, and organizing allied groups of physicians, dentists, and pharmacists in joint meetings.

The work of the Professional Relations Committee of the American Association of Colleges of Pharmacy should dovetail the work of similar national committees of the National Association of Retail Druggists and the American Pharmaceutical Association.

The most definite need at the present time is for capable leadership. It is vital that no antagonism be aroused and that the ground work be a well thought out plan to educate the medical profession in the wisdom of prescribing official drugs and preparations and then supply them with necessary information as to formulae and ingredients, and, to supply the pharmacist with information on the latest preparations and formulas, and finally, to pave the way for professional contacts between physicians, dentists, and pharmacists.

The leadership should be assumed by one of the national associations of pharmacists. The American Pharmaceutical Association has among the objects of its organization as listed in its constitution the following aims:

"To unite the educated and reputable pharmacists of America to encourage such proper relations among pharmacists, physicians, and the people at large, as may promote the public welfare, and tend to mutual strength and advantage:

To improve the science and art of pharmacy by diffusing

scientific knowledge among pharmacists, fostering pharmaceutical literature, developing talent, stimulating discovery and invention, encouraging home production and manufacture in the several departments of the drug business."

Inasmuch as it has these aims, the American Pharmaceutical Association would be the logical group to foster the nation wide movement to stimulate prescription writing among members of the allied medical professions. Since a certain amount of education in prescription writing is involved as well as scientific research and investigation, it would also be logical to enlist the nation's colleges of pharmacy in such a movement. Individual state professional relations committees need not be limited in their state activities for it would not be necessary that the work of professional relations committees of various organizations or states be curbed by national activities, so long as the work of such committees is adequately stimulating and is serving the medical groups it attempts to cooperate with. The major aims of the entire movement should, of course, be formulated by a national professional relations committee. Foremost among these aims should be a plan to disseminate up to the minute information on drugs and preparations from a sound scientific source. Such information has been supplied through our journals by scientists working in college laboratories and manufacturing plants. The work accomplished by such research workers is most gratifying and it is proposed that such work be continued and done in conjunction with a national pharmaceutical research laboratory, which we hope will some day be established as a part of our National Institute of Pharmacy in Washington.

Other aims should include a plan to increase by means of prescription writing, the use of official drugs and preparations and a plan to aid the physician and dentist to obtain knowledge pertaining to official medicinal substances.

It is important that the members of the medical professions obtain this information, for without it prescription writing is impossible. The average medical man today is not familiar with official preparations or their ingredients, doses, or uses. He is familiar enough, however, with proprietary preparations and their uses. If we, as pharmacists, expect him to prescribe official preparations, it is our business as pharmacists to see that he gets the necessary information.

To bring out my point, a leading physician who writes prescriptions whenever he feels sufficiently informed regarding the particular medicament he is prescribing, was asked to give a talk on official preparations. In desperation this physician called the writer of this report and asked for an interview. Being neighbors the writer dropped into the physician's office to find the doctor with his desk loaded with pamphlets and literature from nearly all of the leading pharmaceutical houses. He had arranged this literature on his desk to show that his chief source of information regarding medication came from pharmaceutical houses. He, like so many other doctors, did not own a United States Pharmacopoeia or National Formulary.

The pity is not that this doctor found himself in such a predicament, for he lived in a locality where a college of pharmacy has invited physicians and dentists to use its library and its journals and to call upon its staff members for assistance, and he did. The pity is that throughout the width and breadth of this land there are thousands of medical men so handicapped that they cannot get this information, and the pharmacists of this country are not sufficiently organized to meet the situation.

To show how the pharmacist may aid the physician in prescription writing and the prescribing of either official preparations or medication made from official drugs, may I cite the work being done in New Jersey in which the writer participates.

Throughout a period of about one year the necessary ground work of developing a plan of operation and making the necessary contacts with those in authority in the State Medical Association were put into effect. The New Jersey State Medical Association, through the Medical Practice Committee, was not only willing, but eager to enter into a plan to increase the physicians' knowledge of official drugs and preparations. Other preparations than those official were desired by the medical men, so a New Jersey Formulary was created. The formulae in this publication are not secret. All preparations contained therein are made from official drugs. If any formula should be adopted by either of the official publications, it would be dropped from the New Jersey Formulary.

How do the formulae get into the formulary? Prepara-

tions desired by the medical profession are suggested by them, and the formulae are developed by the pharmacists. Both the medical men and pharmacists have a joint committee in charge of this work.

How do the medical men in the state obtain information made available by these committees? They obtain it through the state medical journal. Six formulae are written in prescription form every other month for the Journal of the New Jersey Medical Society. These are placed as a bound insert in the center of the Journal on lined cardboard so that they can be cut out and filed by the physicians. Each prescription bears notations about the medication, such as average dose, uses, incompatibilities, etc. Besides this, an editorial sometimes appears, but always in the center of the insert is given further information relative to the prescriptions.

To further illustrate how these committees are cooperating and to point out the potentialities of such work, the state medical journal reviews the research of investigators which is published and brings to the attention of the joint committee any drugs or combinations of drugs which are likely to be used by the physician. These are then made into proper form and presented to the physicians through written prescriptions in their journal and also incorporated into the New Jersey Formulary. Through this procedure, the pharmacists are making available to the physicians much new medication at the same time it is brought out by commercial houses. This affords the pharmacist a competitive opportunity which he has never before enjoyed.

Three of the newest preparations added to the New Jersey Formulary are compound kaolin powder, magma kaolin, plain, and with petrolatum. A preparation of aluminum hydroxide which is being used in treating peptic ulcer, will also appear. These preparations are expensive for the pharmacist to buy, but cost only a few cents when he makes them. He can afford to sell them on prescription for what it costs him to buy the proprietary product, thus reducing the cost to the patient and still retaining a good profit.

The New Jersey Medical Society defrays the expenses of bringing this service and information to its members. The information given the medical men is made available to the pharmacist through the state pharmaceutical journal. Thus there is organized an efficient operative unit.

A committee on professional relations can be helpful in bringing together the allied professions of medicine, dentistry, nursing, pharmacy, etc., into a unified organization. Dean Serles has done still better by being instrumental in having such a unified group meet in convention. This is good work. Illinois, Wisconsin, and New Jersey have working organizations of these groups. Their influence in professional as well as legislative matters should not be overlooked.

A library service to the medical professions through the pharmacy college is valuable to both medicine and pharmacy. Pharmacy colleges through their trained librarians can make many valuable contributions.

In line with this professional relations committee movement should go the campaign to educate the layman. Much has been written and said about the contribution of medicine and dentistry to humanity, but it is only in very recent years that anything has been done to present the pharmacist in the role of a humanitarian. Members of other professions appear before all manner of groups and organizations bringing out interesting work in their professions. The pharmacist should do, or have done, more of this public contact work. A list of speakers who would be willing to accept engagements before lay groups to present an interesting study of pharmacy to them, should be made available in the different states. "The Apothecaries Hour", a radio program of Purdue College of Pharmacy, is a good illustration of what may be accomplished.

Pharmacy colleges which are cooperating with physicians through meetings of medical groups at state or national meetings are listed as follows:

- University of Florida School of Pharmacy
- University of Georgia School of Pharmacy
- Howard University School of Pharmacy
- University of Illinois College of Pharmacy
- Louisville College of Pharmacy
- Loyola University New Orleans College of Pharmacy
- Massachusetts College of Pharmacy
- University of Mississippi School of Pharmacy
- University of Montana School of Pharmacy
- North Dakota Agricultural College School of Pharmacy
- North Pacific College of Oregon School of Pharmacy

University of Notre Dame Department of Pharmacy
University of Oklahoma School of Pharmacy
Oregon State Agricultural College School of Pharmacy
Philadelphia College of Pharmacy and Science
Purdue University School of Pharmacy
Rhode Island College of Pharmacy and Allied Sciences
Rutgers University College of Pharmacy
South Dakota State College Division of Pharmacy
Temple University School of Pharmacy
Texas University College of Pharmacy
Medical College of Virginia School of Pharmacy
Wayne University College of Pharmacy
University of Wisconsin Course in Pharmacy

The committee has been active throughout the year. I believe the work of such a committee to be of great importance to pharmacy.

A good work has been started which should not be dropped. Therefore, I recommend the continuation of the Professional Relations Committee.

Respectfully submitted,
George C. Schicks, Chairman.

Report of the Committee on Curriculum and Teaching Methods

At the 1935 meeting of the American Association of Colleges of Pharmacy, President Little recommended that the Committee on Curriculum and Teaching Methods undertake a study of the existing pharmaceutical curricula to determine whether it would be possible to develop what might be called the ideal course of study for pharmacy students.

Much work has already been done in this field by agencies other than the American Association of Colleges of Pharmacy. The two most important recent contributions are the well-known and favorably received volumes, the Charters' Report and the Syllabus. It was felt that a supplementary study could well be undertaken inasmuch as the trends in pharmacy are not stationary; hence, the requirements for teaching its subdivisions might possibly have altered con-

siderably in some respects since the publication of the two afore-mentioned commentaries. The results of this study would call attention to any deficiencies in our curricula and suggest means of modernization. In no way is it intended that this study should conflict with the work of any other committees or bodies engaged in examining the academic requirements of pharmacy; rather it is hoped that the data adduced will be of material benefit to all who are concerned in the betterment of pharmaceutical pedagogy.

This report is an outline of the preliminary steps which were taken as a result of the recommendation of President Little. It embodies principally a summary of the answers given by the deans of the various colleges to three questions. The first was: "Do you feel that the curricula of the various colleges of pharmacy could well conform to a single mold?" In other words, are the objectives of every college so nearly indetical that they should all be required to arrive at them through practically identical curricula? The consensus here is that there should be specified minimum requirements for the pure pharmacy and basic science work which would make uniform the fundamental training of the students and facilitate the transfer of credits. Beyond this point, each school should be given a sufficient latitude of electives to enable it to attain unusual development in some particular field. This allows each school to give adequate expression to its principal scientific objectives without impairing its function as a training ground for the average pharmacist.

The second question was: "What in your opinion constitutes the basic course requirements for the ideal pharmacy curriculum?" Here, among other things, I would like your ideas on a credit hour subdivision between pure pharmacy work, chemistry, botany, bacteriology, and the so-called cultural courses. This question was designed to determine whether, although there is unanimity in the thought that certain basic requirements should be uniform, there was equal unanimity in what these requirements should be. The answers received indicate considerable divergence of opinion in the matter of credit-hour subdivision. This means that there exists even today considerable individuality in the fundamental structure of our curricula, despite the fact that almost everyone agrees that the framework should be

fairly well standardized. A concise summation of the replies is impossible because of the great differences of opinion and the lack of sufficient detail in the majority of them. The answers did, however, accomplish one thing in that they point the way to a logical means of determining a composite idea of what courses should be taught and of how much time should be devoted to teaching them. One of the most interesting points which came to light here was the fact that very few favor a fifty percent division between the so-called cultural and other subjects. It would probably be fair to say that the majority of opinion favored allotting not over twenty-five percent of the student's time to the former.

Question three asked: "Does your curriculum at the present time closely approach your conception of the ideal course of study"? The answers indicate nearly an equal division between those who feel that their curricula are ideal and those who do not. Some of the deans in the first category qualified their approval with statements to the effect that ideal meant as close an approximation to perfection as was possible under the regulations of their particular universities. Others felt that their curricula were satisfactory to meet conditions as they now exist in pharmacy, but will require change commensurate with changes in the profession.

The Committee gathers from its correspondence that it would be neither feasible nor logical to suggest the content for a complete ideal course in pharmacy. However, it does find that much could be done towards establishing more uniform basic requirements. It feels that while the Syllabus is in theory the accepted guide in curricula construction, its principles are in many cases not closely adhered to. Whether this is due to unfamiliarity with the content of the volume or to a feeling that it is not adequate, the committee is unable to say. It is probable that a more detailed inquiry as to what each college head personally feels should be taught and the hours which should be devoted to these subjects will result in a clearer definition of the status of the Syllabus, and in an approximation of an ideal set of basic requirements. It is believed that the Committee could pursue its investigations along this latter line with considerable profit to the teaching of pharmacy.

L. Wait Rising,
Chairman.

Report of the Committee on Relation of Boards and Colleges

Districts 1, 2, and 4 held meetings during the year. District 3 had arranged a tentative program but the meeting failed to materialize on account of adverse conditions in the district. Districts 7 and 8 reported inability to have meetings on account of the expense involved. Districts 5 and 6 did not respond to the chairman's requests for reports, so the chairman is assuming that they also did not hold meetings.

District 1 held a two day meeting at the Massachusetts College of Pharmacy on March 26-27, 1936. The following resolutions which have more than local interest were adopted.

1. That we adopt the following resolution, originally offered at the 1935 meeting of the American Association of Colleges of Pharmacy held at Portland, Oregon, to-wit: That any student that enters a member college after September 1, 1936 shall, regardless of the amount of advanced credit the student may offer, be enrolled at least three years in a recognized college of pharmacy before he may be graduated.

2. That we reaffirm our indorsement of the resolution offered by Commissioner Murphy of Connecticut in his paper read last year in the matter of the minimum requirements of equipment for the dispensing section of a pharmacy and respectfully request that the groups meeting here adopt as rapidly as possible the spirit of the resolution.

3. That inasmuch as the eleventh revision of the Pharmacopoeia became official June 1, 1936, it is hereby recommended that questions based on the new revision should not be used in state board examinations until after January 1, 1937.

4. That the boards of pharmacy in District 1 should inquire about the qualifications of an applicant for registration who comes from another state, especially, his eligibility for registration in his own state, and he should be informed that he cannot secure registration by reciprocity in his home state or any other state of this District, if he does not satisfy all the requirements for such registration in that state.

District 2 held its meeting at the Hotel Claridge, Atlantic

City, N. J. on March 9-10, 1936. The following resolutions of more than local interest were adopted.

1. That the standing committees of the conference make a study of the resolutions passed by this conference since its existence, for the purpose of determining the progress that has been made in the application of the principles and plans thus far approved by this conference with respect to the activity covered by each of the standing committees.

2. That a committee on study of examination questions, consisting of three board members and three faculty members be appointed for the purpose of making an impartial and critical study of all examination questions used by the various boards in their examinations subsequent to June, 1936, and all final examination questions used by the colleges in 1936.

3. That committee chairmen be required to present their reports in writing, which will save stenographic expense; that all reports be made as brief as is consistent with clarity, and thus save on the cost of transcribing and mimeographing the Annual Proceedings.

4. That the committee in charge of the program be requested to select someone to prepare a paper for the next meeting based upon a study of the resolutions passed by this conference in the past decade, and setting forth to what extent the resolutions have been applied and carried out.

5. That the National Association of Boards of Pharmacy be requested to make a study of the practical experience standards and requirements now in force and in contemplation in the various states and in foreign countries.

6. That a faculty committee on examination statistics be appointed by the faculty chairmen for the purpose of compiling statistics on the final general averages of senior students in the colleges of pharmacy, and that a report on the college year ending June, 1936, be made at the next meeting of the conference.

7. That the Standing Committee on Pharmacy prepare a comparison of the practical examinations given by the various boards in this district and formulate a suitable recommendation for a standard examination on this subject.

8. That the committee now designated as the Committee

on Reciprocal Registration arrange, if possible, for the proposed test examinations to be given to the various senior classes in the District, as approved at last year's meeting.

9. That the appreciation and thanks of the conference be extended to Dean Robert C. Wilson, President of the American Association of Colleges of Pharmacy, for his attendance at this meeting, and for his inspiring message on, "Moral Standards for Applicants for Licensure."

10. That the thanks of the conference be expressed to Secretary H. C. Christensen for his presence and participation in the program of this meeting.

Following are some resolutions of general interest from the meeting of District 4 which met at Lafayette, Indiana March 8, 1937.

1. That a vote of thanks be extended to Dean Robert C. Wilson, President of the American Association of Colleges of Pharmacy, for his attendance and for the many helpful suggestions that he has made, and for the very profitable paper which he read. Furthermore, we also wish to express to Secretary H. C. Christensen our deep appreciation for the fact that he has been willing to take time from his many activities to be with us, and to bring to us many ideas that are extremely helpful in the matter of solving many of our problems.

2. That it be recommended to the Executive Committee of the American Association of Colleges of Pharmacy to grant permission to districts to invite non-member colleges to their meetings.

3. That the written examinations be taken upon graduation from college and the oral and practical examinations be given when all experience requirements have been met.

4. That as many Schools and Boards as possible be represented on the program at least once in two years.

A careful reading of the proceedings of the active districts clearly evidences the great value of district meetings. It seems unfortunate that economic conditions render it difficult, if not impossible, for certain districts to avail themselves of such conferences.

Respectfully submitted,
C. Leonard O'Connell, Chairman.

Report of the Committee on Educational and Membership Standards

But one year has elapsed since the adoption of the membership standards now in force, and this is hardly sufficient time to test their acceptability in more than a general way. Furthermore, the American Council on Pharmaceutical Education is at present actively engaged in the formulation of standards for the accreditation of colleges of pharmacy and it is expected that the task will be completed at the meetings of the organizations represented thereon, to be held this week. It would seem advisable, therefore, to await the appearance of the standards for the accreditation of colleges of pharmacy before attempting any changes in our standards, so that duplication of effort in this direction and the waste of time may be avoided.

Respectfully submitted,
A. G. DuMez, Chairman.

Report on Biological Abstracts

The status of Biological Abstracts at present is somewhat uncertain due to the curtailed finances of this Journal.

For the support of the editorial work Biological Abstracts was largely dependent on the Rockefeller Foundation and this support came to a close with the end of 1935. On July 14, I was informed by the editor, Dr. Schramm, that through staff and salary curtailments in 1935 some balance was carried over into 1936, and that this together with small grants obtained from a number of sources will almost provide for the nucleus of the staff remaining for the balance of this year. I also learned that no funds were on hand for 1937.

The Board of Trustees of Biological Abstracts is now engaged in attempts to secure funds. A valiant effort is being made to maintain Biological Abstracts by any emergency means while movements and efforts are under way seeking to find a permanent solution. It is hoped that the American Association of Colleges of Pharmacy will stand

by the enterprise and assist in every possible way to put the Journal on a permanent basis.

A volume for 1937 is now believed to be probable on account of the accumulating manuscripts to date. Good progress is being made on the indices which have been delayed owing to the policy of the editorial staff to make them of unusual excellence and value evidently realizing that the permanent reference value of Biological Abstracts as well as any other abstract journal depends largely on the quality of the indices.

I am informed that the Vol. IX (1935) index will appear in the fall and that the last remaining index, Vol. V, is now being edited and should be in the printer's hands by the end of the year, though not in the subscriber's hands until early in 1937.

It would be a serious handicap to American investigators in the many fields of biological science, if through lack of financial support, Biological Abstracts should be unable to continue in circulation after 1936 or 1937.

I, therefore, recommend that the Executive Committee of this Association give due consideration to the emergency which now exists in the financial status of Biological Abstracts and determine whether any or to what extent support can be offered that publication from this organization.

Respectfully submitted,

Heber W. Youngken,

Reporter on Biological Abstracts.

Report of the Druggists' Research Bureau to the American Association of Colleges of Pharmacy

During the past year the Druggists' Research Bureau has continued to make its services available to retail pharmacists and others interested in the business problems of pharmacy. During the ten years of the Bureau's operation, it has accumulated one of the most complete files in existence of up-to-date facts on drug store operations. Consequently, when problems are submitted to it for analysis, it is possible

to provide inquiries with authoritative and complete information from the facts in its possession.

Among the types of inquiry received are:

1. Requests of individual drug store proprietors for confidential analyses of their profit and loss statements. These statements are compared item by item with the records of other stores, similarly situated, which are on hand in the Bureau's files. Thus definite recommendations can be made to a proprietor of what is necessary in his store in order for it to produce the maximum profits.

2. Inquiries are received frequently from graduate pharmacists who are contemplating the establishment of new drug stores. Oftentimes the facts submitted about proposed locations clearly show that a drug store cannot be operated with profit to the proprietor nor the community in such a location. In this way, by bringing these facts to the attention of inquirers, the Bureau has been able to save graduate pharmacists from the certain loss of many thousands of dollars of their hard-earned capital.

3. Another type of inquiry frequently received is that from graduate pharmacists contemplating the purchase of established drug stores. The Bureau's records show for various types of drug stores what is a fair purchase price and for all drug stores the method which should be used in determining a fair purchase price. Again, the Bureau's recommendations, based upon the substantial volume of statistical facts which it has collected in the ten years of its operation, have assisted both purchasers and owners of established drug stores in the determination of fair prices for their stores.

4. Another type of problem on which the Bureau has received a steadily increasing volume of inquiries is on methods of increasing in drug stores the volume of sales in prescriptions and other professional services of pharmacy. The Bureau has available not only printed case studies on this subject, but also many individual facts applicable to particular situations.

All inquiries received by the Bureau are handled without cost to the inquirer and in the strictest confidence. Its publications available for free distribution include 21 bulletins and nearly 200 individual case studies. Problems requiring

special study are always answered by individual personal letters. During the year the National Wholesale Druggists' Association has continued its financial support of the Druggists' Research Bureau and thus has made possible this service to practicing pharmacists in the business problems of retail pharmacy. During the life of the Drug Institute and its subsidiary, Merchandising Facts, the work of the Druggists' Research Bureau had been transferred to these organizations. With their suspension, the National Wholesale Druggists' Association assumed the financial responsibility for continuing the work of the Druggists' Research Bureau.

Respectfully submitted,
George C. Schicks
W. Henry Rivard
Paul C. Olsen.

Report of the Delegates to the National Conference on Pharmaceutical Research

The meetings of the National Conference on Pharmaceutical Research were held as scheduled and the usual reports were received. No action worthy of special note was taken.

Signed:
Glen L. Jenkins
Justin L. Powers

Report of Committee on Student Branches

The American Association of Colleges of Pharmacy and the American Pharmaceutical Association maintain separate committees charged with increasing the number of student branches of the American Pharmaceutical Association. Since these committees work independently, needless duplication of effort results.

Several months ago, as chairman of the College Committee, I decided upon a course of action and was in the act of writing the deans with regard to it when I learned that

Dean Ziefle, Chairman of the Committee on Local Branches of the American Pharmaceutical Association was already pursuing a similar course and was getting good results.

I reported this condition to President Wilson and asked that he relieve me of the chairmanship of this committee and allow Dean Ziefle to report to this Association the results of the work he has done on student branches as chairman of the Committee on Local Branches of the American Pharmaceutical Association.

W. G. Crockett,
Chairman.

Report of the Chairman of the National Pharmaceutical Syllabus Committee

It has been the Chairman's purpose at this meeting to enter into a discussion of and make definite recommendations about the character and publication date of the next revision of the Syllabus. There will, however, be presented at one of the general sessions this year of the American Pharmaceutical Association a tentative draft of the proposed regulations of the American Council on Pharmaceutical Education having to do with the accreditation of colleges in which is found one section dealing with the Syllabus that needs very definitely to be established before any intelligent action upon the part of the Revision Committee can be taken. The section reads as follows: "In general the curriculum shall conform to that recommended in the latest edition of *The Pharmaceutical Syllabus*." Furthermore, there will be a meeting of the Syllabus Committee on August 26th. The Chairman, therefore, feels it to be wise not to make any specific recommendations about the fifth edition pending some decision by the Syllabus Committee and the above-named council. There are, however, certain statements that have a rightful place in this report.

Seemingly, no thoughtful student of the current Syllabus could fail to note at least two specific references which point out that the present outlines of the four-year course are suggestive and not mandatory. Another statement says plainly that the Syllabus is intended to serve as a guide

in curriculum construction. The only statements that could be interpreted as compulsory are (1) "3,000 clock hours shall be the minimum time during which to cover properly the several outlines," and (2) "certain courses shall be considered required subject matter." It was explained that the outlines of the courses described were for guidance purposes with allowance permitted each school to adjust the sequence and even the content of the matter set up. The Committee went so far as to set up not only required courses but optional courses so that 3,000 hours could be chosen out of the 3,440 clock hours embraced in the entire list of subject matter. In spite of these facts it developed that from the very issuance of the Syllabus there were vigorous protests from some persons about the compulsory character of the outline, not to mention sarcastic comments from others concerning outlines and other features of the edition.

The revision was an attempt upon a wide scale to enlist the cooperation of representative, geographically distributed teachers, board members, and pharmacists. Fifty persons played a part in building the program which was finally endorsed, with certain alterations, by a major number of the members of the Syllabus Committee at Toronto in 1932. This plan was an experiment intended to bring to the task of revision as representative a group as could be mustered with the thought of enlisting a cross-section of pharmaceutical thinking in this country to the end that the Syllabus might better reflect the opinions of its three sponsoring bodies, the American Pharmaceutical Association, the American Association of Colleges of Pharmacy, and the National Association of Boards of Pharmacy. This procedure perhaps caused certain compromises to be made. Mistakes in the volume are obvious, and yet it should be remembered with tolerance that the edition in question had to deal with about 50 per cent more subject matter than any previous editions which had embraced only two-year courses.

Pharmaceutical opinion in regard to education in our field was at the time of revision in a state of flux and has since that time undergone very definite changes. One needs only to study current college catalogues to see that we are not yet agreed upon quite a number of fundamental educational questions. At the Dallas meeting the American Council on Pharmaceutical Education will present its standards

for the accreditation of colleges of pharmacy. Article VII, Section 3 (a) contains, as mentioned above, this brief statement: "In general the curriculum shall conform to that recommended in the latest edition of the Pharmaceutical Syllabus." The first two words are important to note, since they carry no arbitrary dicta but merely repeat substantially what the three bodies that sponsor the Syllabus (and in turn the Council) agreed upon two or three years ago.

In the light of the above statements, the Chairman feels that nothing of a satisfactory character can be done about the next revision until some action of a final character has been taken by this body and by the Council. If, as hoped, the colleges and Council finally adopts the sentence quoted above, then a new Syllabus should be published. If, on the contrary, the colleges make of the Syllabus an impotent, useless guide, then there is no need of another revision.

The financial report which follows covers the period from August 1, 1935, to August 15, 1936.

RECEIPTS

Cash Balance on Hand August 1, 1935.....	\$ 458.70
Interest on \$400 at 3 per cent for 12 months.....	12.00
Sales of 23 copies of Syllabus.....	49.75
Total Receipts.....	\$ 520.45

EXPENDITURES

Postage	\$ 5.00
Express	3.00
Stationery	2.00
Secretarial Assistance.....	8.00
Total Expenditures.....	\$ 18.00
Balance on hand August 15, 1936.....	\$ 502.45
Bound Copies of Syllabus on Hand.....	110
Unbound Copies of Syllabus on Hand.....	500

Respectfully submitted,

J. C. BEARD, Chairman.

Report of the Fairchild Scholarship Committee

This year the Committee is composed of P. H. Costello, R. C. Wilson, W. Mac Childs, and E. G. Eberle. The examination questions were written and graded by C. Leonard O'Connell and his associates at the University of Pittsburgh.

Twenty eight candidates took the examination. Twenty two schools were represented. Twelve candidates averaged above 75 percent. The two receiving the highest averages had no background training other than that of the high school.

The examinations were given under three divisions, namely, pharmacy, materia medica, and chemistry. The averages in these subjects were 82, 71, and 61.9 respectively. The general average in all subjects was 71.6. The highest grade made in pharmacy was 94, in materia medica 88.8, and in chemistry 91.7. The lowest grade in the same subjects were 61, 55.8, and 18.2 respectively and the general average in the same subjects were 82, 71 and 61.9 respectively.

The following table shows the record of the twelve highest.

Candidate	Pharmacy	Chemistry	Materia Medica	Average
1	92	88.5	88.8	89.7
2	94	91.7	78.2	87.9
3	93	76.2	82.6	83.9
4	89	79.5	78.8	82.4
5	89	79.7	77.8	82.1
5	92	79.7	74.8	82.1
6	88	71.5	85	81.5
7	86	83.2	68.6	79.2
8	80	82.2	72.8	78.3
9	87	73.5	73	77.8
10	88	64.5	73.6	75.3
11	90	67	68.4	75.1

The award is made on the basis of the highest general average. This year the winner is Benjamin Philip Hecht, of the Massachusetts College of Pharmacy.

E. G. Eberle, Chairman.

Report of the Committee on the Establishment of A Pharmaceutical Corps in the United States Army, 1936

(In announcing this report, President Wilson said: "Dean Spease is Chairman of this Committee. In view of the fact that there was a duplication of the work of this Committee with the Committee from the American Pharmaceutical Association and further, in view of the fact that Dean Kendig was Chairman of the American Pharmaceutical Association Committee and a member of our body, Dean Spease has requested that the report from Dean Kendig, which will also be submitted to the American Pharmaceutical Association be submitted as our report. He asked that Dean Kendig present that report in his absence and the absence of the other members of the Committee".

Dean Kendig said he had "written a half page preface to go with the report which I shall submit to the American Pharmaceutical Association later to become part of the record to be filed with this Association in further explanation as to why we are submitting the American Pharmaceutical Association report here.")

THE PREFACE

The recommendations of the committee presented and adopted by the American Association of Colleges of Pharmacy last year were, through conference, identical with those adopted by the corresponding committee of the American Pharmaceutical Association. Therefore, the programs of the two associations for this year were identical.

As the Committee of the American Pharmaceutical Association had a deferred appointment with the new Surgeon General for early fall it was deemed best for the committee representing the American Association of Colleges of Pharmacy to await the outcome of this conference instead of proceeding independently.

The results of the conference between the Surgeon General and the American Pharmaceutical Association Committee were such that it was thought advisable for both committees to cooperate in the furtherance of a mutual program. This was done and while the nature of the negotiations did not call for active participation of the standing committee of the American Association of Colleges of Pharmacy in the conference, the support of this Association, the powerful influence of the important branch of pharmacy which it represents, was of great value in obtaining the cooperation of the Surgeon General's office for our proposals and in inducing Congress to act favorably thereon.

That you may be properly informed we submit a resume of the procedure of the Committee of the American Pharmaceutical Association, resulting in the admission of pharmacists as such to the officer personnel of the Army of the United States.

THE REPORT.

If time permitted, it would be interesting to review the endeavors of American Pharmacy to obtain the status for its practitioners in the military forces of the nation which would enable it to perform the full function for which it is qualified, but that interesting story must be left to the historians. May your committee say, however, that for more than a half-century, since 1883, systematic efforts have been made by organized pharmacy to obtain a seat with those who plan, direct and command, but without success. Bill after bill has been presented to Congress, but to the best of our knowledge none of them ever reached the floor for a vote. Regularly the opposition of the War Department, acting, I believe, in entirely good faith, according to their understanding of their requirements, has resulted in preventing favorable consideration of our measures. The opposition centered chiefly on our insistence on a separate corps of pharmacists and on the educational and other qualifications of the men our proposals would have presented to the Army to become members of its officer personnel.

While through all these years we have failed, great credit should go to the preceding committees of this Association, the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, and others interested who, by their persistency, have kept this movement on the door-step of Congress, and maintained it as a live issue in the Surgeon General's office. The work of these men year after year paved the way to the Army for the present committee.

Just before the meeting of the Association in Portland last year, Surgeon General Patterson was succeeded by Major General Charles R. Reynolds. As the new Surgeon General had expressed himself as favorable to the granting of commissions to properly qualified pharmacists in a proposed Medical Auxiliary Corps, and as he was very definitely opposed to the establishment of a separate pharmacy corps, you instructed your committee to cooperate with the Surgeon General to bring about the passage of legislation to effect improvement in the pharmaceutical service in the Army, but if results could not be obtained by this cooperative procedure, the committee was instructed to make a direct appeal to Congress.

In conference with President Costello, who had very promptly appointed the committee, a plan of procedure was adopted and the committee reminded Surgeon General Reynolds of his enforced postponement of a conference arranged for last July; this reminder resulted in a conference in the Surgeon General's office between the Surgeon General and his officers, and Secretary Kelly and the Chairman.

General Reynolds was quite sympathetic toward the idea of granting commissions in the Army to properly qualified pharmacists. In the beginning he made it very clear that, like his predecessors, he did not favor the establishment of a separate Pharmacy Corps in the Medical Department. He referred to the fact that economic conditions had prevented any increase in the commissioned personnel of the Medical Department since 1920 and of his hope for early additions thereto. In this connection he again spoke of the proposal to reorganize the Medical Administrative Corps into a Medical Auxiliary Corps wherein would be commissioned administrative specialists, sanitary engineers, and other professional specialists, and stated that he was in favor of including pharmacists. He also said that he expected to have a talk with the Secretary of War at an early date and then would be able to formulate plans for the necessary legislation and after that, would be glad to confer with us again about our desires.

Six weeks later, January 3rd, we asked to be informed about the result of his conference and he wrote:

"To date no definite plans have been made for the legislation affecting the personnel of the Medical Department. My information is that this matter will be considered in the general program of the War Department relating to officer personnel, plans for which have not yet been perfected."

January 16, 1936, the Committee Chairman wrote to the Surgeon General as follows:

"Major General C. R. Reynolds
The Surgeon General, United States Army
War Department
Washington, D. C.
Dear General Reynolds:

"In your letter of January 4 (S G O 001), you told me that no definite plans have been made for legislation affecting the personnel of the Medical Department, and that the matter was bound up with

the general program of the War Department relating to officer personnel, plans for which have not yet been perfected.

"Will you please inform me whether tentative plans are being considered for the improvement of the pharmaceutical service by placing a certain number of qualified pharmacists on a commissioned status? We would also like to know whether the general program to which you refer is nearing completion and whether it is the intention of the War Department to introduce a bill for passage at this session of Congress which will contain provisions for the commissioning of pharmacists in the Army.

"Since being appointed Chairman of this Committee my whole desire and disposition has been to cooperate with the Surgeon General to effect any desirable changes in the pharmaceutical service, but at the present time our Committee is being subjected to strong pressure to have a bill introduced in Congress for the establishment of a separate Pharmaceutical Corps, and unless we can indicate prospective success by other methods, we will have to take cognizance of this proposed congressional action.

"By way of illustration, may I quote from a letter received from a distinguished pharmacist who is executive head of one of our outstanding colleges of Pharmacy and Chairman of the Committee on Military Affairs of the Pharmaceutical Association of his state. His judgment and influence require our respect and consideration.

"I take it that your objective is that expressed in the recommendations of this committee offered at the last American Pharmaceutical Association Convention; namely, to secure legislation providing for a Pharmaceutical Corps in the United States Army, and that the committee will be satisfied with nothing less. It does not seem to me that pharmacy should be satisfied with anything less. Of course, the granting of commissions comparable to those in other lines of service would be some improvement, but I believe that the danger in accepting that would be that it would again defer for a number of years the possibility of securing a Pharmaceutical Corps.

"It seems to me further that now is an opportune time to present this strongly inasmuch as there appears to be a tendency to view army reorganization and increased funds for army purposes favorably."

"He then writes suggesting detailed procedure for creating congressional interest and bringing about national, state and local organizational pressure in favor of the separate corps for pharmacists.

"Any information you can give me about the War Department's intentions with reference to pharmacy will be appreciated and will better enable me to handle the affairs of this Committee with satisfaction to the parent organization, and in the interest of the pharmaceutical service of the Army."

Under date of January 21st General Reynolds replied:

"Dr. H. Evert Kendig, Chairman,
Committee on Pharmacy Corps in the U. S. Army,
Temple University School of Pharmacy,
Philadelphia, Pa.

My dear Sir:

"In reply to your letter of January 16, regarding the status of the plans for commissioning pharmacists in the Medical Department of the Army and as to the general program of the War Department relating to officer personnel, I have to advise you that I have been informed by the War Department that there will be no officer personnel bill presented to Congress at this session. This means that there is practically no chance for the Medical Department to be increased or reorganized in the near future.

"You will recall that one of the most urgent reasons for an increase in the Medical Department was the increase in the enlisted force without a corresponding increase in the officer forces of the Medical Department. In consequence of the increased responsibility resulting therefrom, I am surveying the situation at the various stations in the United States and the foreign garrisons to determine the actual shortage and the situation created by the increase in the enlisted personnel. It may be that the situation will be found to be so acute because of this shortage that the War Department will favor special treatment of the Medical Department, but I seriously doubt that there will be a reorganization of the Army in such a way as to result in either a separate Pharmacy Corps or the Commissioning of pharmacists in the Medical Administrative Corps.

Very sincerely yours,

(Signed) C. R. REYNOLDS,

Major General, U. S. Army,
The Surgeon General."

January 22nd he supplemented the letter with this statement:

"Since writing to you in reply to your letter of January 16, I have developed a plan by which it may be possible to prevail upon Congress to give us a specific increase in the Medical and Dental Corps of the Army and to permit of the appointment of qualified pharmacists to fill accruing vacancies in the Medical Administrative Corps up to a certain number.

"As I stated in my recent letter, there is no hope of getting a comprehensive reorganization through Congress, nor through the War Department for that matter, but on account of the urgent need in the Medical Department for the care of the recent increase in the enlisted force it may be that a very modest bill might be favorably

considered and in this bill we might insert a provision for substituting pharmacists for some of the vacancies in the Medical Administrative Corps now going to enlisted men of the Medical Department of two years service.

"I have just had a conference with Dr. Kelly, whom I called in to explain my plan, and he has agreed to talk the matter over with you when he sees you in Philadelphia."

We acknowledged his letters and said that a further reply would be made after we had received Secretary Kelly's report and conferred with the members of the Committee.

We quote from Secretary Kelly's letter reporting his conversation with General Reynolds:

"I did not earlier reply to your letter of the sixteenth enclosing a copy of your letter of that date to Surgeon General Reynolds as I wished to get certain additional information in order to answer the inquiry in the closing paragraph, and the developments referred to below may change the entire situation.

"General Reynolds called this morning and asked me to see him this afternoon. I have just returned and am giving you the information at his request with the understanding that he will also write you briefly.

"General Reynolds showed me his last letter to you in the closing paragraph of which he expressed the opinion that the proposed measure to reorganize the Medical Department would probably not be considered at this session of the Congress. The conclusion had evidently been reached that if the measure made no progress under two previous Surgeons General, there was practically no hope for it under present conditions.

"After writing you, consideration was given to what might be done as an alternative and emergency measure. In short it is proposed to submit a short measure asking for two hundred additional medical officers, one hundred dental officers, and that future vacancies in the present Medical Administrative Corps, the personnel of which is limited to seventy-two officers, be filled by medical and pharmaceutical officers.

"The proposed additions to the Medical and Dental Corps can be justified by the large increase in the enlisted strength of the army which has created an emergency.

"The present law requires that vacancies in the Medical Administrative Corps be filled by the promotion from among the enlisted personnel of the Medical Department of those who have had at least two years service and are recommended by the commanding officer for the examination. You recall the objectives to this plan voiced at our recent conference. It is believed that a request not

changing the number but requiring that present and future vacancies be filled by the appointment of medical specialists and pharmacists will not meet strong objection.

"There are some vacancies now and it is estimated that in all twenty-seven vacancies will occur in the near future. General Reynolds stated that as the result of a survey of the situation yesterday, he could recommend the commissioning of sixteen pharmacists of the type we have in mind and that he believed, if the measure could be enacted, this number could be appointed within two years. They would be named to the supply depots, to the general hospitals, to the laboratories and to his office, leaving the present personnel to take care of the smaller hospital pharmacies. It was proposed that they be commissioned as first lieutenants and that the number be limited to sixteen, the latter proposal being made to overcome the expected objection of the officials that more pharmacists than are actually required might be commissioned. I urged that the limitation as to the number be eliminated because the total personnel of the Administrative Corps was already limited and because the Surgeon General would have the right to select, but it was believed that the limitation was necessary for the present anyway.

"General Reynolds frankly recognized that this plan would not fully meet our views. He believes, however, that it represents a start and that it is about all he feels he can have approved by the War Department. He did say that if this plan is disapproved there would be no objection to our going ahead with our own measure.

"General Reynolds will await word from us and I expressed the opinion that it would require two weeks. Although I have tried to give the main points in the short time available, you will probably wish to ask questions by letter and later to discuss the proposal personally. I expect to be in Philadelphia Friday, the thirty-first, or you may decide to come down here earlier. My thought is that we should get a very definite understanding before the proposal is submitted to the committee for a final decision. It appears to me that this proposal means progress for us even though we may not finally accept it."

Another report from Secretary Kelly unfolds our procedure: (Date of letter—January 28, 1936).

"Your letter of the 24th came promptly and I agree with you that it would be necessary to have a very distinct understanding on the question raised in the second paragraph as well as on other equally important questions, before we agree to the proposition suggested by General Reynolds. I should want to see a draft of the actual bill before giving final approval. As I understood it, we were being asked if the proposal had our approval in a general way, the details to be worked out later.

"I also agree with the views expressed by Dr. McCartney, especially because of his experience in the Army and because of the information given below.

"Dr. Eberle and I have just returned from a very pleasant interview with Senator Sheppard of Texas, who is Chairman of the Senate Committee on Military Affairs and who was the ranking minority member of the Committee when our bill for a Pharmacy Corps was before the Congress. It had his approval at that time. After explaining that we had not pushed the measure because of the financial conditions, I inquired if he thought it wise to proceed with it at this session. His reply was that such a bill would have no chance of passage if opposed by the Budget Bureau or the War Department, under present conditions, and he expected that it would be opposed.

"I thought it best to write you about this development right away and suggest that you consider it until I see you in Philadelphia on Friday when we can decide on the procedure to be followed. With Senator Sheppard's interest, I feel much more hopeful about working out a satisfactory arrangement under the Surgeon General's plan, for the commissioning of a reasonable number of pharmacists."

February 1st Secretary Kelly and your Chairman held a long conference in Philadelphia and decided to contact the Senate and House Military Affairs Committees with the objective of assisting the Surgeon General in obtaining the increase in personnel that he desired and which would at the same time enable him to introduce into the proposed legislation the clause which would satisfy us.

Secretary Kelly wrote on February 10th:

"Early last week I called Dr. Reynolds and learned that he had not made sufficient progress with his bill to discuss it with us. He called me on Saturday for some information and I had a short visit with him this morning. His bill is now nearly in shape and he will let me know when we are to see him. Dr. Reynolds would like very much to discuss the whole matter with Senator Sheppard and I am trying to arrange for the conference. It will strengthen our position, I believe, to have this conference in advance of the submission of the proposed bill to the War Department.

"On Saturday I saw Congressman Faddis of Pennsylvania, who is a member of the House Committee on Military Affairs about another matter. After that was attended to, I brought up the need for commissions for pharmacists in the Army. Mr. Faddis was a colonel in the late war and I found that he was interested through a contact with a pharmacist friend. He suggested that we avoid the controversy which a proposal for a separate corps would certainly bring

up and warmly approved our efforts to work out a plan with the Surgeon General. He offered to introduce and to push a bill if one could be worked out, and indicated that he would interest himself in the matter in case the Medical Department were not reasonable. He asked me to see him as soon as our plan is in shape. We now have an interested friend in each committee which will be of great assistance. Mr. Faddis also urged that we see that pharmacists are commissioned in the Reserve Corps.

"I will keep you advised of developments and will ask you to come down as soon as we are prepared to reach a decision."

General Reynolds and Senator Sheppard met and the Senator offered to introduce the bill, but the General felt that greater progress could be made by first securing the approval of the War Department and said he would at once give his attention to this phase of the matter.

March 18th we again called on General Reynolds and discussed with him the provision of the bill to be introduced by Senator Sheppard. It was after this conference that we began to think we would see the legislation passed during President Costello's administration.

General Reynolds obtained the approval of General Craig for the bill and General Craig requested that a memorandum in its support be prepared for submission to the War Department. With the endorsement of the Medical Department and having Senator Sheppard, Chairman of the Senate Committee on Military Affairs, sponsor the bill, we confidently looked forward to passage of the measure without publicity which might have drawn opposition. One main advantage of our measure which helped greatly in securing its passage was that it did not have to have the approval of the Budget Bureau although it was submitted to the Bureau, or of the White House. It made no increase in the number of officers in the Medical Department and did not increase the Army expense by one dollar.

March 30th the bill was introduced in the Senate by Senator Sheppard and was designated as S.4390. It read:

AN ACT

To amend the National Defense Act relating to the Medical Administrative Corps.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the third sentence of section 24e of the National Defense Act, as amended by the Act of

June 4, 1920 (41 Stat. 759, 774) is hereby amended by striking out that portion relating to the qualifications for appointment in the Medical Administrative Corps, which reads, "enlisted men of the Medical Department between the ages of twenty-one and thirty-two years, who have had at least two years' service", and substituting therefor the following: "pharmacists between the ages of twenty-one and thirty-two years who are graduates of recognized schools or colleges of pharmacy requiring four years of instruction for graduation, under such regulations and after such examination as the Secretary of War shall prescribe: *And provided further*, That the number of such pharmacists in the Medical Administrative Corps shall not exceed sixteen."

General Reynolds was very helpful and offered to go to the War Department and see if he could not get approval of his report on the bill and have a favorable report sent to the Senate Committee at once. He requested the War Department that he be permitted to appear for the measure if any hearings were to be held.

The legal section of the War Department discovered the necessity for a minor correction in order to prevent a conflict with other legislation and the bill was redrafted. It was then approved and finally sent to the Committee on Military Affairs with the following endorsement from Acting Secretary Woodring, (under date of April 22, 1936).

"The bill, amended as indicated above, will provide the Medical Department of the Army with a number of well educated, highly trained specialists in pharmacy and allied subjects who will greatly benefit the service. Such appointees will be able to perform the administrative duties of officers of the Medical Administrative Corps and their services will be valuable to the pharmaceutical work of the Army and improve the training of enlisted men of the Medical Department generally employed in that work.

"The bill, amended as indicated above, will operate to discontinue further appointments in the Medical Administrative Corps of enlisted men of the Medical Department who have meager qualifications for such commissions. Experience in recent years has shown that such appointees, who are required by law to have a minimum of two years' enlisted service in the Medical Department, have not materially added to the efficiency of the medical service, because of their lack of professional and technical experience and attainments. The discontinuance of these appointments is recommended.

"While suffering a moderate numerical loss of commissioned officers, the Medical Department will benefit by the improvement in the quality of the appointees in the Medical Administrative Corps, qualified as indicated in the bill.

"In view of the foregoing, the War Department recommends the enactment of S.4390 if amended as indicated above.

"The enactment of this legislation, amended as indicated, would result in no additional cost to the Government.

"This proposed report was submitted to the Bureau of the Budget which advised that it would not be in conflict with the financial program of the President.

Sincerely yours,
(Signed) HARRY H. WOODRING
Acting Secretary of War."

April 24th the Senate Committee on Military Affairs favorably reported the bill and it was placed on the Senate Calendar.

In the meantime we were considering introduction of the bill in the House of Representatives and our advisers were divided as to whether we should have this done at once or wait until the Senate acted.

May 12th the bill was passed by the Senate under the consideration of unopposed measures.

Secretary Kelly immediately advised the Secretary of the Committee on Military Affairs of the House and he promised to do everything possible to get the bill over in time for consideration at the next meeting of the committee. May 18th the bill was referred to the House Committee.

May 21st General Reynolds again showed his sincere interest by calling on Mr. McSwain, Chairman of the House Committee on Military Affairs and urging prompt consideration. At the request of Chairman McSwain, General Reynolds appeared before the Committee on May 26th and explained the provisions of the bill to the satisfaction of the members. May 27th the bill was reported favorably and I wish to read a splendid tribute to pharmacy made by Representative Faddis in reporting the bill.

"The committee feels that, under the present conditions, proper recognition commensurate with the education and qualification of the pharmacists connected with the Medical Corps of the United States Army is lacking. This makes it impossible to secure pharmacists of the proper professional qualifications to fill this most important function connected with the Medical Corps. This legislation will remedy the present condition and will without additional cost add to the efficiency of the Medical Corps and give these specialists the recognition in rank to which they are entitled."

June 19th the bill was passed by the House and its provisions became effective June 26th when the measure was signed by President Roosevelt.

Pharmacists commissioned in the United States Army as such are now authorized by law and will be inducted into the service at an early date, giving to Pharmacy the full recognition of its professional status.

I look upon this professional recognition as the first accomplished step, and by far the most important, toward our major objective of improving the pharmaceutical service in the Army which we have contended can best be brought about through a separate corps of pharmacists.

If the young men whom we supply to the War Department make good, i.e. if they create a place for pharmacy in the officer personnel by the valuable service they can perform—if they make the pharmacist indispensable to the Army plan for maintaining the health of the troops, I have no doubt whatsoever that the pharmaceutical service will be expanded just as rapidly as proven usefulness becomes evident.

The Medical Administrative Corps has an authorized strength of 72 officers. It will be noted that S.4390 limits future commissions in this Corps to pharmacists, and the 16 commissions at present authorized is estimated to cover the vacancies expected within the next year. Examinations to fill existing vacancies will be announced at an early date.

The most important problem facing us today is to induce the young men who have the educational, cultural, social and physical qualifications for officer personnel to apply for the available commissions.

Your committee wishes to express its indebtedness to the similar committees of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy and the State Association Committees which so ably supported our efforts. Because of the particular procedure required it was not necessary to ask a delegation representing these associations to assemble in Washington, but without the knowledge that they were standing by ready to help in any way possible, we could not have made the strong representations in high places which brought about success. Dean Edward Spease and Dr. Robert L. Swain, chairmen of the respective committees, especially should be mentioned as giving valuable support and assistance to your committee.

We received the most valuable aid and counsel from Dean Charles B. Jordan at a most important stage of our conversations with the Surgeon General.

We are greatly indebted to Surgeon General Reynolds not only for his sympathetic understanding of our aims, but for the active assistance which this report clearly sets forth.

We likewise acknowledge the great help we received from Senator Sheppard, Chairman of the Senate Committee on Military Affairs and the late Representative McSwain, Chairman of the corresponding committee of the House of Representatives, and Representative Lester Hill of Alabama. Because of the powerful positions they held, their support was essential.

Particularly, your committee wishes to extend credit to Secretary Kelly, who acted as liaison officer between the Surgeon General's office and the Senate and House, and our committee. His advice and assistance were of the greatest value to us and without his knowledge of Washington and its procedure, we could not have accomplished this attained objective without the elapse of additional time, and the expense incident to maintaining a representative in the Capitol City. In fact chief credit for this achievement should be given to Secretary Kelly, and it is a pleasure for your chairman to state it without reservation.

Your committee recommends:

- First: That the committee be continued.
- Second: That the name be changed to "Committee on Status of Pharmacists in the Government Service."
- Third: That it be made a standing committee of the Association.
- Fourth: That the committee be composed of members of this Association, the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy, or that a plan be worked out with the other associations creating a joint committee of some kind so that the one committee can represent and speak for the three organizations.
- Fifth: That it be instructed to continue its efforts to improve the pharmaceutical service in the Federal and State Governments, and thereby obtain for pharmacy the recognition and status to which it is entitled.

Respectfully submitted,
H. Evert Kendig, Chairman.

EDITORIALS

Some of Pharmacy's Current Problems

Pharmacy, like every business or profession, has its points of unusual strength as well as its elements of weakness. I believe that a poll of our members might reveal a surprising agreement that one of the weakest links in our pharmacy chain is its organization, or more accurately, its lack of organization.

Three years ago "The American Institute of Pharmacy" was dedicated in Washington, D. C. The objectives of the movement for a headquarters building in our nation's capitol can be briefly stated as follows: (1) To provide a permanent and adequate home for American Pharmacy, (2) To, so far as possible and feasible, bring together in this home those organizations and associations that are interested in promoting pharmacy as a public health profession, (3) To develop additional activities and services, such as a reference library, an historical museum, a research laboratory, and such other services as might be necessary for the continued advancement and promotion of pharmacy.

The first objective has, of course, been splendidly realized. Our headquarters building is a beautiful and useful structure of which we have every reason to be proud.

The second objective, not yet attained, is well expressed in the following statement which was printed in a little booklet issued at the time the building was dedicated: "Pharmacy must keep pace with other professions and maintain its special position in the public health field. To do this it must build up its reputation and prestige and must constantly improve its service. These objectives, so necessary to every branch of pharmacy, can only be obtained through a compact, well-equipped and well-manned organization of all those forces and influences which contribute to its advancement."

The additional services outlined in objective No. 3, and many others, have been instituted or accomplished in spite

of this handicap; a fact which reflects great credit on the national officers of various pharmaceutical groups who have carried on under very adverse circumstances.

The resolution by Congress which authorized the erection of the building limited its occupancy to those organizations "serving American pharmacy on a non-profit basis". This restriction played a vital part in securing tax exemption. The plan to consolidate in this structure, professional organizations such as the American Association of Colleges of Pharmacy and National Association of Boards of Pharmacy, which could not afford heavy operating expenses, was stressed as one of the vital reasons for tax exemption. It is important for many reasons that we should strive uninterruptedly for the realization of objective No. 2. It will prove helpful if our members will give thought to this proposal, so far as American Association of Colleges of Pharmacy welfare and the contribution which we, as Association workers, may make to the general welfare of pharmacy are concerned.

To many of us it seems quite obvious that the American Association of Colleges of Pharmacy will never realize its greatest usefulness until it has a central location, closely associated with other pharmaceutical activities, and at least one representative giving full-time consideration to its problems and activities. The voluntary system under which our association has operated has proved as satisfactory as it has due very largely to the sacrificial service of such individuals as Dean Jordan, Professor Cooper, Dean Lyman and others and due also to the fact that our problems until now were relatively simple, certainly less involved.

The situation which we now face is quite different. We must organize more effectively if we are to adequately meet the problems of the days ahead. When we are strategically located, and organized to carry on a well-planned program, such as the other health professions have already developed, we will experience more outside interest and assistance than we have ever before enjoyed.

Our headquarters' library and museum are already established and are being developed as rapidly as possible. A research laboratory will be established in Washington, probably early in 1938, and can be operated on funds now available. The committee on maintenance is securing additional funds for the library, museum, and other activities. A fund,

sufficient for three years, has recently been made available to establish the popular journal which will provide wide contact with the pharmacists of the country. It seems highly essential that the American Association of Colleges of Pharmacy should participate in many if not all of these various enterprises? The National Association of Boards of Pharmacy has already voted to move its offices to our headquarters building. It is hoped the change may be made not later than the early part of 1938.

The advantage to the general profession of pharmacy of such a consolidation of forces is readily apparent. It would allow for the careful scrutiny by each group of every proposal for general advancement. Not only would this be a great safeguard but for mutual problems, the final decision would have behind it the combined forces of all groups. This does not mean that all associations would become indiscriminately blended. By preserving the identity of each group, each organization could deal directly with its own particular problems and at the same time be kept acquainted with the activities of the associated groups.

It might be visualized that such an arrangement would provide something in the nature of a cabinet for the general advancement of pharmacy. Such a solid cooperative front could not fail to impress those with whom we work as well as those whom we wish to influence. It would also prove effective in preventing needless overlapping, reduce effort and expense and enable government officials and other interested individuals to easily contact every division of pharmacy.

A considerable number of important activities have been successfully consummated through our headquarters building in Washington during recent years. A few of the more important and basic activities in which pharmaceutical education and registration are directly concerned are listed below.

The transfer of pharmacists from the sub-professional to the professional and scientific classification by the Personnel Classification Board and the Civil Service Commission; The recognition by the Office of Education in Washington, D. C. of the member schools and colleges of the American Association of Colleges of Pharmacy as institutions of higher learning; The commissioning of pharmacists in the Public Health Service; The commissioning of pharmacists in the Army

and the improvement of their service in the Navy: The enactment of prerequisite legislation in the various states, an accomplishment which at the end of the present legislative sessions may be nearly 100% complete: The issuance of Leaflet No. 14 by the Office of Education.

The American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy have of course rendered considerable assistance in carrying out the above enumerated activities in recent years. However, distance and the prohibitive time necessary for travel or, even for exchange of correspondence, have prevented their full participation. In other words our present organization is decidedly faulty.

While such progress is encouraging, it represents only a beginning toward securing the recognition and opportunity for service that pharmacy should be accorded. For example, the Civil Service Commission plans to improve its classification and to extend them to the field services and desires the cooperation of the various branches of science and the professions in bringing this about. The Office of Education has indicated that the guidance leaflets should be revised. If this is done Leaflet No. 14 should be brought up to date and greatly improved. These are but some of the pending activities which should be given our immediate attention.

Secretary Kelly's office is constantly besieged with many requests which could be much more effectively handled by a representative of the American Association of Colleges of Pharmacy with an office in the headquarters building.

During the existence of the codes, which we may again have with us in some form (good friend Lyman to the contrary), the Secretary's office received almost daily inquiries about pharmaceutical education and registration as well. His office also receives many requests from pharmacists who desire to transfer either to or from the United States, or who wish to know about certain requirements, most of which involve educational questions.

Last fall the Medical Department of the United States Army asked for the dates on which the various schools and colleges of pharmacy went to the four year course in pharmacy. This request was naturally referred to the Chairman of the Executive Committee of the American Association of Colleges of Pharmacy by Secretary Kelly. Literally weeks

were required to collect this data and send it to Dr. Kelly who in turn relayed it to the Medical Department of the Army. Information of this sort should be ready on fifteen minutes' notice. A government official, or anyone else, should be able to get official information on any branch of pharmacy without delay. He should be able to consult in Washington an official representative of every branch of pharmacy, collectively if desired, on thirty minutes' notice. What a united front of that sort would do for pharmacy. What it would do for pharmaceutical education and for the colleges which you and I represent. Real vision is essential for worthwhile, sustained progress. A pennywise policy is always unproductive and usually extravagant and costly to all involved.

Inquiries have been received in Washington, through the International Pharmaceutical Federation or the Pan-American Union, asking about the status and progress of pharmaceutical education. A couple of months ago Secretary Kelly corresponded with the Chairman of the Executive Committee of the American Association of Colleges of Pharmacy about a statement from the Pan-American Union to the effect that they would like to undertake a study of the interchange of professional certificates between the American Republics. No one has found time to follow up this proposal as yet, the reason being that twenty-four hours constitutes too short a day for the imperfect and decidedly undermanned organization of pharmacy which now exists.

There are, of course, many completely neglected contacts which should be made by us with other educational organizations and groups. We should keep in close contact with the work of the American Council on Education, the Office of Education, the Civil Service Commission, and other agencies which have an important relation to pharmaceutical education. These contacts have been almost entirely neglected so far as any initiative on our part is concerned.

Many inquiries are received from persons interested in pharmacy as a career. Usually Leaflet No. 14, with corrections, is sent them. Many of these inquiries should have much more detailed attention than it is now possible to give them. Here is a most important contact. One which could be made to mean much to every college. Can we afford to invest a few additional dollars to insure our own future, as

well as to accomplish less selfish achievements in behalf of Pharmacy? Can we afford not to do so? It seems very certain that the American Council on Education will soon need a Washington office. Perhaps it would be possible for this Council and the American Association of Colleges of Pharmacy to occupy the same office and cooperate as to office help. Possibly the same office staff might be able to serve both of these groups, thereby cutting down on expense to both organizations.

Will you please give these suggestions your very serious consideration and be prepared to discuss them in the pages of this journal?

It is quite impossible for us to satisfactorily handle the problems which lie ahead of us with our present lack of organization. Let us effectively organize and not fumble the splendid opportunities which lie before us.

Ernest Little.

The American Journal of Pharmaceutical Education

The American Association of Colleges of Pharmacy is to be congratulated for the prompt and decisive action which produced the American Journal of Pharmaceutical Education. Symbolic of the rapidity of advancement in educational standards and entirely in keeping with its needs, sponsorship of a publication devoted to the interests of Pharmaceutical Education give to the Association a medium of expression and communication through which all who are interested may keep abreast of the problems and developments in the teaching of Pharmacy.

Aside from its prime purpose to meet the needs of the teaching profession, the Journal will serve its sponsors well if it receives favorable attention at the hands of members of Boards of Pharmacy and other representative Pharmacists. Co-ordination is highly important between departments in any industry or enterprise and to function properly it is necessary that each group in the field of Pharmacy understand and appreciate fully what the aims and purposes of their co-workers in other branches are. The American

Journal of Pharmaceutical Education has important functions to perform and the degree to which it fulfills its mission will determine the measure of the service it renders. Pharmacy needs and deserves its best service.

P. H. Costello.

American Pharmacy and Pharmaceutical Research

The Council on Pharmaceutical Research has informed those who care to know what is being done in the way of pharmaceutical research in this country. The array of titles presented annually is formidable indeed. Sometimes one is inclined to suspect that the array is a bit out of proportion with actual achievements. But be that as it may. That pharmaceutical research is coming to its own both in educational institutions and manufacturing laboratories is an achievement in which we may glory.

At a recent congress on conservation, a member pointed out that our national government is spending millions for conservation but next to nothing for research in the line of conservation. The result is that much money is being spent ill advisedly. So we in pharmacy have stressed research, but have not provided adequate facilities for the publication of our results.

When in 1896 the writer succeeded Dr. Frederick Hoffmann as editor of the "Pharmaceutical Review", previously published in German as "Pharmaceutische Rundschau", he soon realized that we in this country had no adequate means for the publication of longer original papers. In 1898, therefore, he issued the "Pharmaceutical Archives" as a supplementary journal. It was hoped that it might become to American pharmacy what the "Archiv der Pharmazie" had done for German pharmacy. For six years the writer carried the financial as well as the editorial burden with the aid of a few sympathetic and generous friends. The enterprise failed because of lack of support.

Having retired from administrative duties during the fall of 1935, the writer ventured to revive the "Pharmaceutical Archives" in January 1936. The enterprise would have failed at once had it not been for the income from a fund that had

been collected during many years. With some notable exceptions, neither colleges of pharmacy nor pharmaceutical manufacturers have shown generosity in supporting the enterprise. One dean expressed his regrets saying that his school could not afford to spend the dollar asked for the subscription. A manufacturing establishment, which had declined to advertise, requested that copies be sent regularly to its library. Some pharmaceutical manufacturers have spent thousands of dollars in the support of research at one or more universities, but they could not persuade themselves to support this enterprise by taking a page advertising at the insignificant sum of twenty-five dollars per page per issue.

The writer knows of numerous masters' and doctors' theses that have been in cold storage or even buried in libraries these many years for the simple reason that American pharmacy had made no provision for their publication. But where lies the rationality of supporting research when the results are not made known, hence available. It may be argued that many pharmaceutical investigators have published their results in chemical journals. Well and good! But is it not a sad comment on American pharmacy that many of our contributions to science are thus accredited to chemistry and not to pharmacy. Little good, after all, to our calling is accomplished by many titles published by the Research Council when the scientific world at large accredits chemistry therewith.

The United States of America is the richest country on the face of the earth. We spend millions on trade journals which will be regarded as curious anomalies by future generations of pharmacy. We have not supported the Journal of the American Pharmaceutical Association sufficiently to take care of our manuscripts. Will the revived "Pharmaceutical Archives" follow the first attempt because of lack of support? The attempt made is extremely modest. It is being made because American pharmacy owes it to itself adequately to support the publication of research accomplished with industry and not infrequently with much self denial.

Edward Kremers.

The Trend of Prerequisite Legislation in 1937.

I do not feel that I should be the spokesman at this time for the trend in pharmaceutical legislation. I shall, however, briefly review the situation. A long, long time ago, the American Pharmaceutical Association had a committee on model laws, or something of that sort, but for some unaccountable reason it was dropped. At that time, the National Association of Boards of Pharmacy was vitally interested in the cause of uniformity in legislation as a means of expediting reciprocity, so we took up a legislative campaign of our own. We were particularly interested in uniform requirements for entrance to the board examinations, uniform educational requirements, and workable reciprocal clauses.

We soon found out though that we had to branch out in other fields to get results. State legislative committees wanted help on other points too, and so we became the logical information bureau. We had to co-operate to get our own program into the proposed laws. We ended up by compiling National Association of Boards of Pharmacy model law propositions on most of the points in state pharmacy laws and a survey of the laws of the country will show these enacted in many states.

Our work is about over, I am happy to report, except perhaps that we will have to act as a watchdog to see that our uniformity is not broken down. At this legislative session, we have been working with the five non-college states. All have prerequisite bills pending with a good chance of passage. Only today I sent thirteen different telegrams to the thirteen members of the public health committee of the legislature of one state urging adoption of a bill there. We shall, of course, continue this work until every state is on a college prerequisite basis.

At the Dallas meeting, the American Pharmaceutical Association again revived its state legislative program. The Committee on Modernization of Pharmacy Laws, Dr. R. L. Swain, Chairman, is making a detailed study of state legislation largely from the standpoint of efficient law enforcement and will probably present a model draft at the New York convention.

H. C. Christensen.

Food, Drug and Cosmetic Legislation

As indicated in the January issue of this journal food and drug bills were offered in both Senate and the House early in the present session of Congress. These were S-5 and H. R.-300 respectively.

At this time, March 16th, the Senate bill has been passed and will go immediately to the House for consideration. The House bill so far as we have been able to learn has not come up for serious consideration. In the March 15th issue of United States News we find this comment:

"A FOUR-YEAR effort aimed at broadening and tightening of this country's pure food and drug law appears to be drawing to a successful end."

Unanimous Senate approval was given on March 9 to the bill of Senator Copeland of New York, designed to effect reforms in the old law. Before approval was given the penalty provisions of the bill were amended to meet the objections of President Roosevelt who thought that they actually weakened the existing law.

If the House now approves, as sponsors of the bill expect it will without serious objection, then Federal law will:

Prohibit false advertising in publications or on radio of foods, drugs, cosmetics and therapeutic devices.

Requiring the labeling of food to disclose ingredients by name.

Prohibit traffic in food that is dangerous to health. Require label declaration of artificial colors and flavors in food. End traffic in confectionery containing metallic trinkets and other inedible substances.

Cosmetics are included for the first time in Government regulations and under the proposed law advertising is subject to more regulation than in the past."

Frankly, we are not yet fully advised whether or not the bill as it passed the Senate is as strong as we had hoped the new legislation would be. However the items of control as listed above are certainly a step in the right direction. We trust pharmaceutical educators will continue to press their representatives to work and vote for as strong legislation on this subject as it is possible to get.

Wortley F. Rudd.

The Value of Statistical Records

Recent attempts to secure certain statistical data from Colleges of Pharmacy in District No. 2 of the National Association of Boards of Pharmacy, have lead to the conviction that much information that would be valuable both in the control of present operations and planning of future operations is not available. The most vital element in the success of any enterprise, whether it be industrial or educational, is the quality of its management. Good managers have learned that wise judgments and decisions must be based upon carefully prepared facts rather than upon mere opinions and guesses.

Most of us will concede the important position that a good accountant holds in any business enterprise of to-day. His position has evolved rapidly from a mere recorder of figures to an indispensable counselor and guide on matters of policy and general business operation. Industrial managers are far in advance of educational managers in the preparation and use of statistical data.

With the advent of more scientific methods of measurement and guidance in education came the need for more comprehensive and readily available records. Thus has developed a species of recorder known as the college registrar. Like the records of the industrial auditor, the records of the college registrar should contain a complete showing of the whole educational operation of the college. Where this showing is brought to the surface and made use of in the conduct of the institution, there is a much more vivid recognition on the part of the college officers of their relation to each other and of their obligations to students than otherwise exists. The important business of admissions has placed a new and greater emphasis upon the necessity for adequate records. Statistical records may be conveniently divided into internal and external records. Internal records are those relating to the operations of a particular institution, whereas external records are compilations of the records of several institutions. For example, the unit cost of instruction should be known to the management of each institution but the compilation of this data for all of the members of an association would provide a standard unit cost of instruction

which could be used by each of the member colleges in judging the efficiency of its own organization.

District No. 2 of the National Association of Boards of Pharmacy, has been struggling for years in an attempt to determine why so many college graduates fail to pass the licensing examination. The answer to this perplexing problem will be solved only by the scientific compilation and interpretation of statistical data. Individual opinions are too subjective to carry much weight. How can we say that we should not accept students from the low quarter or fifth of their high school class until we know how many such students we have accepted in the past and what their records have been with us? How can we say that a student should have a period of post-graduate internship in a drug store until we know how many have had pregraduate experience and of what value it has been? How can we say that the quality of pharmacy students has improved with the advent of the four year class unless we have valid statistical norms with which to compare each student's record? How can we tell whether a student is doing capacity work unless we have a record of his capacity before us? How can we know how well our graduates are meeting the requirements of the state licensing board, if we do not have the records before us? How do the teaching loads of our faculty compare with those of other schools? How do the salaries of our faculty compare with those of other schools?

This list of questions could be extended almost indefinitely. In practice, however, there is a limit to the amount of data which can be scientifically prepared and interpreted by already overworked clerical staffs. Hence proper selection of important information is desirable.

While we may shy at methods that tend toward standardization, it would appear that the American Association of Colleges of Pharmacy might well make some effort to inform its member colleges as to what statistical information is desirable and how it may be obtained and interpreted. It would appear safe to conclude that an institution of learning should have as good a system of accounting in dealing with its students and faculty as it has in connection with its purchases of materials.

A. B. Lemon,
School of Pharmacy,
University of Buffalo.

An Editorial Policy

In a recent issue of the *Journal of the American Pharmaceutical Association*, the Editor of the Department of the American Association of Colleges of Pharmacy questioned the desirability of papers of a research type. He then proceeded to publish such a paper, when there were other papers available that did not deal with research problems.

In the past, a number of papers presented at the various meetings have never been printed. In some cases they have been read by title; in other cases an abstract has appeared. Some of these abstracts arouse one's interest in the subject and then leave one to speculate concerning the rest. As an example, Professor Lynn read a paper at the 1935 meeting entitled "Instruction about Synthetics." After a few words about fundamentals, the abstract closes with: "A method is given in outline for instruction which reduces all organic compounds to a few simple types and which greatly facilitates the teaching." Any benefit one could derive from the paper has been lost.

Whether a paper was presented at a meeting in 1906 or 1936, if it has something of merit on pharmaceutical education, why not publish it? Why not let us see what has already been written, before we go ahead and write more? Why not reexamine these papers in the light of the added emphasis we hope to put on pharmaceutical education in this new *Journal*, instead of having them "indefinitely postponed" by one man or by one committee, and never giving them another chance?

Kenneth Redman.

THE EDITOR'S CRIME

The Editor is charged with criminal negligence. He is the father of three daughters, all pharmacists and that they present a problem to pharmacy. Editor admits daughters have presented problems as girls, but not as pharmacists. Editor asks that the matter be referred to President Roosevelt for girl control measure. Association refuses and refers whole matter to the Committee on Study of Menace of Women to Pharmacy. Dr. Nellie Wakeman comes to Editor's support. She says—"I can see how something which looks like a problem may be created by over-much discussion. If many of the well intentioned friends of women would leave them alone to work out their own solution, some of their problems would be eliminated, not only in pharmacy, but in other occupations as well." (Editor feels better.)

Rufus A. Lyman, Editor.

THE EDITOR'S PAGE

As the Editor sat in his proverbial easy chair and watched the last copy of the first issue of the *American Journal of Pharmaceutical Education* slip into a bag for the outgoing mail his mind went into a nameless reverie. In the reveling, two phantoms wrestled for supremacy, one phantom was "When a feller needs a friend." The other one was "Life's darkest moment." After a few days letters began to arrive, not one, but many. As they were opened and their contents noted, the phantoms of gloom disappeared and their places were taken by "The thrill that comes but once in a lifetime." Where brickbats were expected, there came sincere expressions of commendation far beyond what the Editor deserves. In every letter there was a request as to the reaction made by the appearance of the first number. For the answer to this question, you are referred to "Gleanings from the Editor's Mail". In quoting from his mail the Editor made an attempt to delete personal references. He found he could not do it without changing the writer's meaning. The gleanings are therefore presented verbatim with the Editor's apologies to both the readers and the writers for printing personal expressions. He, however, wishes to say he is most grateful to those who have expressed their feelings. They have been the source of encouragement and inspiration.

The readers of the *Journal* should bear in mind that the Publication Board and the Editor play but a minor part in its success or failure. The former determines its policies and its scope. The latter edits the material presented for publication. The rank and file of those engaged in pharmaceutical education must in some way furnish the financial means that any journal must have in order to exist. And what is just as essential, they must contribute material that represents a real contribution to pharmaceutical and professional education and which will be of such value that men will seek for it and after they have found it will consider it worthwhile.

It was for the special purpose of fixing the responsibility from contributions both financial and material dealing with education that a collaborator was named for each college.

But that is not sufficient. A responsibility for the support for this Journal rests upon the shoulders of every man and woman engaged in pharmaceutical education in America.

The American Council on Education has undertaken to correlate the whole system of education from the kindergarten to and through the fields of the professions. One thing the American Journal of Pharmaceutical Education has done which was never done before, it has placed pharmaceutical education on parade. We cannot afford to fail.

The Editor makes no apology for featuring in the first pages of this issue the subject of the teaching of pharmacognosy. It is his opinion that not only the methods of teaching, but the subject itself, needs vitalizing. He also believes that to accomplish this end, a better background training in plant physiology, plant ecology and plant chemistry is necessary. The drug plant garden should become the outdoor laboratory for the study of those problems concerned with the production of plant principles for medicinal and for industrial uses. Occasionally we hear the refrain that the synthetic chemist will replace nature and there will be no drug plant industry. Such a condition is as likely to develop as that the synthetic chemist will replace nature in the production of foods or that the physician will replace nature in the art of healing. We should not forget that nature is the great physician. Man has by the application of his intelligence brought her help and increased her efficiency. What pharmacognosy needs is the application of some human intelligence to her problems. Young men working in this field are pioneers that deserve encouragement.

Dean Ernest Little in a leading editorial discusses some problems of vital interest to the American Association of Colleges of Pharmacy. While he touches upon a number of points worthy of study, the trend of thought is directed toward closer cooperation with other pharmaceutical bodies and finally the establishment of a central office in the American Institute of Pharmacy at Washington with some official in residence who could speak with authority for the American Association of Colleges of Pharmacy.

The Editor is not opposing this movement, but he does

feel it his obligation to state that there are two sides to this problem and it was for the purpose of provoking discussion in the July issue of this Journal that this editorial was written. Some of the annoyances Dean Little refers to were due to the lack of knowledge as to where information is obtainable. For example—if Dr. Kelly had inquired of Secretary Cooper for the information he wanted instead of the Chairman of the Executive Committee, he could have had it in less than two hours. Iowa City, in these days of time annihilation, is as close to Washington as is Newark. So far as a central laboratory for research is concerned, I question whether this Association could ever contribute to its support. What we need to do is to develop research in our teaching institutions where it belongs and which are also the source of those trained to do research. One of the most thoughtful men in American pharmacy has recently said—"I am not at all certain that it would be a good thing for us to have an office in Washington. If we are to have a representative in Washington, he must be a high class representative, one to whom we would have to pay a good salary. Unless we employ such a person, we will merely be adding another clerk to the office force of the Headquarters Building." One thing the Editor is sure of and that is, until American Pharmacy is organized along more democratic lines than it now is, we must do nothing that will hinder us in any way of speaking our minds as to what is right and wrong in all the problems that confront pharmaceutical education and legislation.

One of the most hopeful signs of the times is the manner in which educators and druggists are cooperating in the staging of programs which have as their objective the keeping of the druggist in touch with the advances in the pharmaceutical sciences. The movement is country wide and in this issue we have given what space we could to it by printing a few of the programs. These give some idea of the subject matter presented.

The editorial on American Pharmacy and Pharmaceutical Research from the pen of Dr. Edward Kremers deserves more than a passing notice.

Something is wrong when pharmaceutical investigators deliberately give their researches to chemical journals for

publication. They enrich chemistry and pauperize pharmacy. Something is wrong when pharmaceutical manufacturers make their money through druggists, but give great sums of money to medical or other institutions, but neglect pharmaceutical institutions. Something is wrong when in my home town druggists have given hundreds of dollars to equip the rooms of the local County Medical Society but do not have a place for their own meetings. Just now, the least we can do is for each of us to send a dollar to Doctor Kremers for the support of "Pharmaceutical Archives." We owe it to the cause and we owe it to ourselves.

The retirement of Dr. Henry B. Ward as Permanent Secretary of the American Association for the Advancement of Science comes with a pang of regret to the pharmacy group. This is not the time to eulogize this illustrious man, for he has years of active service for science ahead of him. The time came when he felt he should be relieved of the routine work of a great organization, that he might do those things he would like to do as his time and strength permits. The story of his forceful life may be gathered from any source that records the history of illustrious men. He was primarily a parasitologist, but many other phases of biological science felt the impress of his work. His training as a parasitologist brought him in contact with the medical sciences. When he became Permanent Secretary of the American Association for the Advancement of Science his burning ambition was to more closely correlate the work of the pure and applied sciences. One cannot read the pages of Science during his term of service without realizing how well he accomplished his purpose.

His interest in pharmacy was evident in the early days of his career and because of his untiring efforts and his sympathetic and constructive counsel it was possible for the Pharmacy Section N₂ to become an integral functioning part of the American Association for the Advancement of Science. For these services and for yourself, Doctor Ward, the American Association of Colleges of Pharmacy will hold you in grateful memory and wish and pray for you many more happy years of service.

The current issue carries memorials for five men who during the year have, with the march of time, passed on.

It is right that the contribution that each made to the cause to which they consecrated their lives should be told by their colleagues who knew them best. The Editor, however, has a feeling that it is his prerogative to pay a tribute to those who have rendered a great service to pharmacy. Since that has been done by those better qualified than he, he waives the privilege but presents a tribute to one who contributed richly to our cause and yet who personally we never knew. I quote from a letter dated Sparta, Georgia, March 17th, 1937. "I am here in my boyhood home with my mind full of memories of other years and watching my precious little mother slipping away into the great beyond. Thinking back to bygone days and years, every spot on this old farm is made sacred by reason of her, for she loves this land as did Scarlet O'Hara love Tara. Knowing my mother's love for this land which has been in her family for several generations, I feel that I could bathe each acre of it in sacred tears, as it was one of her sorrows that I could not live on it as she has.

I so wanted to bring you down here to talk to her. She is one of the real women of the South; just about ten years of age when Sherman's Army passed on its march to the sea. She saw gin-houses, barns and stock stables burned, cattle slaughtered and homes pillaged. She lived through the horrible days of reconstruction with all the poverty and spiritual collapse which followed. She came to young womanhood under these conditions which in all the vividness of 'Gone With the Wind' is but faintly portrayed. Through it all she came with courage and faith that in God's own way, all things were right. Such courage and faith as hers I have never known, but it has been and will continue to be an inspiration to me, and I pray that through God's grace I may come to the end as she finds it as exemplified in the words 'He has fought a good fight and has kept the faith.'—"

Two days later Robert C. Wilson buried the body of his mother in the red soil she loved so well. Her soul was wafted aloft with the songs of the Easter season.

To know Robert C. Wilson was to know his mother. To know his mother was sufficient to bring inspiration and courage for the accomplishments of any human task. In this hour of sorrow, Doctor Wilson, we bring to you our affection and our companionship and for comfort we again turn to the fourteenth chapter of the Gospel of John.

Gleanings from the Editor's Mail

Permit me to congratulate you on the general excellence of the new journal. It appears somewhat ragged in spots, but I am sure that this deficiency will be corrected in time.

A. G. DUMÉZ,
University of Maryland.

I believe after some thought that there is a real need in this country for a journal dealing with pharmaceutical education.

MARION L. JACOBS,
University of North Carolina.

I have just finished reading the American Journal of Pharmaceutical Education from cover to cover in a very critical manner and am delightfully surprised. You are to be commended for the splendid setup, word and type choice, size, arrangement, and material. You have done a splendid job. A fond hope is extended that the support will not fail to sustain the Journal and that it may be kept free from the necessity of selling "space" to finance it. Let us at least keep off the "free goods" list.

JOHN F. MCCLOSKEY,
Loyola University, New Orleans.

There seems to be a happy balance of the contents. I am glad you omitted the editorial "we" and used "I". There may be those who think this egotistical. Let them. I enjoyed the first number and will look forward to the second.

J. GROVER BEARD.

Thank you for the copy of the American Journal of Pharmaceutical Education which I received this morning. The contents, with the exception of the talk I made, is most interesting.

HARMON W. CALDWELL, *President*
The University of Georgia.

I have not had time to give the Journal careful reading, but even a casual glance is sufficient to show that it is a splendid piece of work.

ROBERT L. SWAIN, *Secretary,*
Maryland Board of Pharmacy.

From a later letter:

Please enter one year's subscription to the American Journal of Pharmaceutical Education to each of the following addresses. (These individuals subscribing were the five members of the Board of Pharmacy of the State of Maryland. Pharmacy faculties please take notice.—Editor.)

ROBERT L. SWAIN, *Secretary.*

I have read with great interest Volume I, Number 1, *American Journal of Pharmaceutical Education*, and I want to congratulate you on the contents of the first issue. Especially was I pleased with the editorials. Your article concerning the presidential address of Dean Robert C. Wilson, and your description of the visit to the room where Crawford W. Long discovered "how to give humanity relief from pain", is of an unusually high order.

TOWNES R. LEIGH,
The University of Florida.

—●—
You are to be congratulated upon the success of your initial effort as Editor of what will subsequently become an historical volume.

L. WAIT RISING,
The University of Washington.

—●—
I have just looked over the first issue of the *Journal*, and I believe it is going to be a highly creditable publication. It is your baby, you are nursing it fine, and I believe it will be proud of its "Daddy" someday. I haven't read it with an eye to errors. If there are any as you suggest, I know they will be fewer and fewer as the issues come out.

WORTLEY F. RUDD,
Medical College of Virginia.

—●—
I have received the first issue of the *Journal* and I wish to congratulate you on the fine appearance of this number. I sincerely trust that sufficient subscriptions will come in to make it clearly a financial success and that your interest in having it established will be fully justified.

CHARLES W. JOHNSON,
The University of Washington.

—●—
I have received the first copy of the *Journal*. You have done a fine job and it is a very creditable publication. (Dean Jordan criticizes at some length the duplication in the committee reports and the Summary of the Proceedings—Editor.)

CHARLES B. JORDAN,
Purdue University.

—●—
I have seen Number 1, Volume I of the *American Journal of Pharmaceutical Education* and I like it very much. I congratulate you upon the excellence of your performance as Editor of this *Journal*, which I am sure will play a most important part in pharmaceutical education in the future.

CARL J. KLEMME,
Purdue University.

—●—
First, congratulations on your conceiving of the plan and on carrying the project to successful fruition. We have needed such a journal.

You have made it a dignified publication, as we knew you would, but it has a friendly tone too, especially in the Editor's pages.

I have an idea that after you have lived with the Journal for a year, you will be able to improve its typography and arrangement in a number of ways. For a new publication, its appearance is highly creditable. We believe the Journal as you have planned it will be an asset to pharmacy. We shall hope to see it grow steadily in interest, influence, and importance.

HUGH C. MULDOON,
Duquesne University.

—●—
The very interesting first issue of the new Journal has come and I want to congratulate you on the fine job you have done.

H. C. CHRISTENSEN,
*Secretary National Association of
Boards of Pharmacy.*

—●—
The first number of the new venture (American Journal of Pharmaceutical Education) reached Washington just before I left. I looked it over and so did Woodley and we both discussed it without finding anything but praise. In fact, he spoke what was really in my own mind when he had reached the end of his inspection of the periodical. He said, "All I have to say is that he has cut out a big task for himself to get more numbers equal to this one."

HENRY BALDWIN WARD,
*Permanent Secretary American
Association for the Advancement
of Science.*

—●—
This is a fine piece of work that you have initiated. I read the first number with a great deal of pleasure and in my opinion, no one could have started a greater service to the Colleges of Pharmacy than the American Journal of Pharmaceutical Education. Accept my congratulations and be assured that I will cooperate in every possible way to make the journal a continued success.

A. O. MICKELSEN,
North Pacific College of Oregon.

—●—
Permit me to congratulate you on the first copy of the Journal. I have read it from cover to cover and think it is splendid.

ROBERT W. MORRISON,
University of South Carolina.

—●—
We are all pleased with the first issue and I hope the checks are coming in fast enough to insure its success financially.

HUGH C. VINCENT,
State College of Washington.

—●—
It is difficult to extract the necessary funds from men below professorial rank (and even from men of that rank). Most of them cannot

be convinced of the need for such a publication, arguing that they received necessary material in the Association section in the Journal of the American Pharmaceutical Association.

CHARLES V. NETZ,
University of Minnesota.

I have received a copy of the Journal and wish to offer you my congratulations on a splendid piece of work. It will take its place as one of the outstanding journals of its type.

THOMAS D. ROWE,
Medical College of Virginia.

All of our staff members have received copies of the Journal and I want to assure you that many complementary remarks have been vibrating concerning the organization and content of the publication. Congratulations on the results of your tireless efforts in behalf of the profession of pharmacy. Efforts to enlist the support of outstanding Oregon pharmacists through subscriptions to the Journal will be fostered.

ERNEST T. STUHR,
School of Pharmacy Oregon State College.

I was very much interested to see Volume I, Number 1 of the American Journal of Pharmaceutical Education. This Journal is almost essential for an Association and I am glad that you are able to finance it. I suppose there is no hope of it ever becoming self-supporting.

I have few suggestions to make. I think possibly I would have chosen a snappy color for the cover. The format of the pages is a bit crowded in my judgment, but my judgment isn't very good. It might be a good idea to have the whole matter of appearance referred to some outside authority like our own Miss MacLatchy for suggestions.

Generally speaking, I think you have a good set-up of official news articles, editorials and current notes from the field. Those divisions ought to put in all the pharmaceutical news that you would want to include.

I congratulate you on this forward step of your Association.

W. W. CHARTERS,
*College of Education,
Bureau of Educational Research,
Ohio State University.*

Having glanced through the first issue just received, I want to congratulate you as well as the Association upon the success of the new enterprise. It certainly is expressive of not only a new step but, no doubt, of new life as well. How I recall the remarks of misgivings expressed when shortly after 1900 we did not advance in leaps and bounds. Those were days when we laid the foundation to the structure which now dominates pharmaceutical education in these United States of ours. May we hope that because we take satisfaction in the present superstructure, we may not become dictatorial in the manifest endeavor

of some to make us all alike. This would be worse than if we had failed utterly during the early years of this century.

EDWARD KREMERS,
University of Wisconsin.

I am well pleased with the first copy of the Journal and I believe there is a real place for a publication of this kind.

WILBER J. TEETERS,
State University of Iowa.

I do believe I am going to find your Journal interesting, understanding and of value and I hope it receives the support it deserves. We poor pharmacists and examiners have floundered around long enough trying to glean something out of a mess of journals that come to us and are either a conglomeration of everything a drug store shouldn't be or so scientific as to bewilder us.

P. H. COSTELLO, *Secretary,*
North Dakota State Board of
Pharmacy.

I am sending a subscription for the American Journal of Pharmaceutical Education to Miss Cooper today and I guess that is the best proof it contains information we want. Am looking forward eagerly for the April issue.

ROBERT P. FISCHER,
Secretary, New Jersey Board of
Pharmacy.

Dean Charles E. Mollett of the University of Montana has made a brief study of the policies of a few Association schools with reference to travel allowances. While it is not complete, it is interesting and shows the tendency toward this important function of a university. Everything possible should be done to encourage our faculties to travel and attend scientific meetings. The man who does this throughout his life time has gone a long way toward giving himself a liberal education. Many University administrations favor this policy—may their number increase. In Dean Mollett's study, thirty-one questionnaires were sent out, and twenty-nine replies were received. (All state supported schools but two).

Twenty reported part of all expenses for state pharmacy meetings.

Seventeen reported some or all expenses to American Pharmaceutical Association meetings, including the American Association of Colleges of Pharmacy.

Five reported expenses to district meetings of National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy.

Eight schools reported separate travel budgets ranging from \$50.00 to \$500.00 per year.

Five reported that their travel budgets were a part of the University budget for travel.

Four reported amounts equivalent for expenses to annual meeting of American Association of Colleges of Pharmacy.

Notes and News

Late committee appointments are as follows:

Joint Committee on Degrees—Charles B. Jordan and Ernest Little (with two from the National Association of Boards of Pharmacy).

College Committee on Relation of Colleges and Boards—District Number 5—Chairman, Charles H. Rogers, University of Minnesota, College of Pharmacy, Minneapolis, Minnesota.

—●—
The paid subscriptions to the *American Journal of Pharmaceutical Education*, as we go to press, according to a report from Professor Cooper total 139. At this time less than half of the Collaborators have been heard from.

—●—
Howard L. Reed, Lecturer on Materia Medica at the Massachusetts College of Pharmacy, was elected Grand President of Phi Delta Chi at the fraternity's Grand Council meeting, recently held at Indianapolis.

—●—
Robert T. Anderson, a senior in the School of Pharmacy, has been elected president of the entire senior class of the University of Georgia. This is the first time, perhaps, in the history of pharmaceutical education, that such an honor as this has come to a pharmacy student. This is an accomplishment that deserves recognition.

—●—
Leslie M. Ohmart, Instructor in Pharmacy at the Massachusetts College of Pharmacy, has been appointed Instructor in Pharmacology at the Dental School of Harvard University for the current year.

—●—
A law just passed by the Legislature of North Dakota and signed by the Governor, provides a minimum of professional and technical equipment which a drug store must have to obtain a license or a renewal. Cosmetics have also been included in the Food and Drug Act and the Act has been revised to eliminate fraudulent advertising and claims, and to require proper labeling of all products. A fair trade law was also enacted.

—●—
The School of Pharmacy, University of Oklahoma took an active part in the annual convention of the Oklahoma Pharmaceutical Association, at Norman, the last week in February. Dean Johnson spoke on "Laboratories in Drug Stores." Professor Ralph Beegle's subject was "Advertising" and Dr. L. E. Harris discussed "Extending Information to Physicians Concerning the Use of Official Medicines." Illustrating his talk, Dr. Harris had an exhibit on the use of ointment vehicles in dermatology and another one on the use of dermal parasitocides.

—●—
The University of Oklahoma has a new prescription laboratory in the pharmacy building. It is equipped with sixteen individual model

prescription cases designed by Dr. Loyd Harris, with the idea in mind of duplicating actual conditions usually found in retail drug stores. The cases were built on the campus.

Dr. Thomas Parran, Surgeon General of the United States Public Health Service was recipient of the honorary degree of Doctor of Pharmacy, honoris causa, at the 116th annual celebration of Founders' Day at the Philadelphia College of Pharmacy and Science. The subject of his address was "The Aims and Ideals of the United States Public Health Service".

Messrs. J. K. and Eli Lilly have recently completely equipped a manufacturing laboratory in the Philadelphia College of Pharmacy and Science.

Mrs. Nellie Perry Watts, honor Scholar of the 1936 class of the Philadelphia College of Pharmacy and Science, was the recipient of nine of the fourteen prizes awarded to the members of the graduating class.

The American Journal of Pharmacy is probably the oldest pharmaceutical journal published in America. Publication began in 1825 and has been continuous. The one hundred sixty-eighth volume is just completed.

There has been organized recently in the City of Philadelphia, The Guild of Pharmacists. The group is entirely free from any outside connection, social, collegiate, or political. Its membership is made up of those pharmacists whose principal occupation consists in compounding prescriptions and dispensing medicines, medical and surgical aids and appliances, and those products designed to safeguard health and advance hygiene and sanitation. Its purpose is to bring together the scientific group of pharmacists in order that they may better keep abreast of the progress in the science of pharmacy and in touch with the newer developments in medicine.

Dean J. Grover Beard is convalescing from the injuries received in an automobile accident last November. He is in the Clifton Springs Sanitarium at Clifton, New York. We are grateful for Dean Beard's recovery.

Glenn Smith, a 1936 graduate of the School of Pharmacy of Washington State College has been appointed pharmacist in the Medical Administrative Corps of the Army. Lieutenant Smith has been assigned to the Letterman Hospital of San Francisco.

The School of Pharmacy of the University of South Carolina reports the unusual increase in registration of 30 per cent in the last two years. This is the greatest increase in any department of the University.

Professor George Hargreaves, Department of Pharmacy, Alabama Polytechnic Institute, presented a paper on Derivatives of 6-Amino-

quinoline before the Alabama Academy of Science at Tuscaloosa, April second.

Professor David W. O'Day, College of Pharmacy, University of Colorado, recently lectured upon the subject, Ephedrine and Epinephrine, before the Journal Club of Pharmacy, Chemistry, and Physics.

Dean A. G. DuMez, School of Pharmacy of the University of Maryland, addressed the annual meeting of The American Pharmaceutical Manufacturers Association in St. Petersburg, Florida, on March 23, 1937. His subject was "Research".

Mr. Sam Arnett, B.Sc., Purdue, 1935, has been appointed a fellow by the National Formulary Committee. He will study the official tannin bearing galenicals.

The "Apothecary Radio Hour" is a weekly program sponsored by the staff of the School of Pharmacy of Purdue. The subjects discussed deal with historical pharmacy, narcotics, the content of a home medicine chest, and food and drug legislation.

Mr. F. Ford Millikin, College of Pharmacy, University of Colorado, B.Sc., 1928, M.S., 1930, has recently accepted a position as expert analyst for the New Jersey Board of Pharmacy.

Dr. Ralph W. Clark, University of Wisconsin, has taken over the teaching duties of Dean J. G. Beard, of the University of North Carolina, while the latter is on leave.

Dr. J. E. Weaver, Professor of Plant Ecology, College of Pharmacy, University of Nebraska, has received an invitation from the British Association for the Advancement of Science to be an official guest of the organization at the annual meeting at Nottingham, England in September, 1937.

The research fellowships offered at the University of Michigan have aided ten young men to obtain advanced training in pharmaceutical chemical research leading to the degree of Doctor of Philosophy and made possible the publication of thirty-five original contributions. The researches have been directed toward organic syntheses of pharmaceutical interest, and has included such fields as synthetic laxatives, organic arsenicals, hypnotics, antispasmodics, and local anesthetics and the projects have been carried out under the direction of Dr. F. F. Blicke.

Lecture and laboratory courses in plant chemistry for seniors and graduate students are being developed and offered in the College of Pharmacy of the University of Michigan by Dr. J. L. Powers. The enrollment in the first plant chemistry course offered, includes graduate students from several different departments of specialization. This, together with requests for additional laboratory courses in plant chemistry, indicates that there is a real interest in this type of work.

In order to aid in the development of a research program in plant chemistry, special equipment has been installed.

Professor Howard C. Newton who has recently been elevated to the deanship of the Massachusetts College of Pharmacy is a native of Massachusetts. His early training was in the school of Southboro. He finished the high school at the head of his class. He became an alumnus of the Massachusetts College of Pharmacy and had experience in a retail pharmacy under such men as LaPierre and Godding of Boston.

In 1914 he joined the faculty of the College of Pharmacy of Creighton University and later became dean, a position which he held until 1935 when he was called to the assistant deanship of his alma mater. While at Creighton he obtained the bachelor's and master's degrees.

He has been active in the work of many local, state, and national fraternal, professional and scientific organizations.

North Pacific College of Oregon opened a prescription pharmacy as an educational unit in the main foyer of the building last October. The establishment of this pharmacy was made possible through the combined efforts of the college faculty and the local branch of the American Pharmaceutical Association.

Dean Ernest Little leaves for Nice, France about the middle of May. He will attend the International Rotary Convention as a representative of the Newark, New Jersey Club. He will be absent about one month and during this time Dean Jordan will attend to the work of the Chairmanship of the Executive Committee.

A Committee on Professional Education of the American Council on Education had a conference in Chicago last December. A second conference of this committee has been called for May 6th at Washington, D. C. Deans Lyman, Rudd, and Briggs will attend. Dr. Raymond Walters, President of the University of Cincinnati, is Chairman of the Committee.

The enrollment in the Division of Pharmacy of South Dakota State College for the year 1936-1937 is ninety-one. This is the largest in the history of the institution. A large percentage of these students is made up of the children of retail pharmacists, many of whom received their own training at this institution. Many others were influenced to choose pharmacy at South Dakota State College due to the activity of the alumni and members of the State Pharmaceutical Association, who are particularly interested in selecting a high type of young men and women for the profession of pharmacy.

In this connection it may not be amiss to point out that it is entirely within the power of those who are now engaged in its practice, to determine what the future of American pharmacy shall be, by the manner in which they select the students who are to enroll in the colleges. It is hoped that they will have a proper appreciation of how great their responsibility, and that they will encourage only those young men and women of the highest character and intelligence to enter this profession.

MISCELLANEOUS ITEMS OF INTEREST

Request from National Syllabus Committee

It was decided at the Dallas meeting of the American Pharmaceutical Association to revise the Pharmaceutical Syllabus, because of recent changes occurring in pharmaceutical lines. The Committee would appreciate from interested individuals comments on the revision work along any of the following lines: (1) Changes in the required and optional subjects both Professional and Basic and time allotted to same (see Syllabus, pp. 16-17); (2) Changes in title and content of the outlines offered in the Syllabus; (3) Deletion of any outlines; (4) New outlines which should be included; (5) Enlargements of the Section on State Board Examinations.

It is only through discussion and exchange of ideas from those interested in pharmaceutical education that this work can be made of the greatest benefit to all concerned and devoid of much criticism. Any suggestions will be much appreciated and will receive due consideration.

HENRY M. BURLAGE, *Acting Chairman,*
School of Pharmacy,
University of North Carolina.

Dr. Henry B. Ward Retires

The February 5 number of *Science* carries the following announcement: Dr. J. McKeen Cattell, chairman of the executive committee (American Association for the Advancement of Science), presented a resolution expressing the appreciation of the association for the long and faithful services of the permanent secretary and a desire on his part to be relieved of the duties of the position. The council adopted unanimously the resolution as follows:

WHEREAS, Doctor Henry B. Ward has served on the Council and Executive Committee of the American Association for the Advancement of Science with loyalty and devotion for many years, and

WHEREAS, Doctor Ward is now completing a term of office as Permanent Secretary during which time he has further served the Association with loyalty to the interests of the organization, and

WHEREAS, Doctor Ward indicated some time ago that he would desire in the near future to be relieved of the duties of the office of Permanent Secretary,

BE IT THEREFORE RESOLVED, That the American Association for the Advancement of Science express its deep appreciation to Doctor Ward for his long and faithful services and commend him for his sincere devotion to the office of the Permanent Secretary in advancing the cause of science.

(Adopted by the Council, December 31, 1936.)

The Medical Congress

Secretary H. C. Christensen of the Boards of Pharmacy and Mrs. Lillian H. Bowen, covered the various sessions of the Medical Congress held in Chicago on February 15 and 16, 1937, and gathered a world of interesting information. These sessions are an annual event, attended by medical educators and medical examining board members, and are very similar to our own National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy sessions in pharmacy.

We are prone to think of pharmacy as more or less backward in some respects and look up to medicine as the profession which has solved most of its problems. Imagine our surprise then to find the medical examining boards criticising the kind of job the educators were doing in the colleges, while the college men were telling these same examiners that their questions were obsolete, etc. Well, we felt at home.

Perhaps the most valuable information gained from the meeting was a complete copy of the questionnaire used in the survey of the medical schools, information as to graphs compiled on the individual schools, and the method of procedure that had been adopted. This will be of great help in our own pharmacy college survey, as medicine has had many years of experience in this type of work.

Another valuable suggestion which might be applied to pharmacy is that of a round-table group, to which each association, conference, or group would send an authorized delegate (usually its president or chairman). The purpose is integration of efforts. The American Pharmaceutical Association with the National Association of Boards of Pharmacy, American Association of College of Pharmacy, Conference of Law Enforcement Officers, National Conference on Pharmaceutical Research, National Association of Boards of Pharmacy, American Council on Pharmaceutical Education, and others represented could do much to overcome the present confusion and overlapping of activities.

Dr. Edward Cary of Dallas, a former president of the American Medical Association (you heard him speak at the American Pharmaceutical Association banquet at Dallas and Senator Thomas Connally argued law versus medicine with him in a most humorous manner), was the principal speaker at one of the sessions of the medical boards. He stressed the fact that the *idea* of licensing, which had originated over eight hundred years ago, had not yet been improved upon. He showed the distinct need for state licensing boards, in spite of the feeling of some that the National Board of Medical Examiners might well take their place. He showed the value of the state board in legislative circles, their legal standing, and their power in protecting the welfare of the people. And he asked for closer co-operation of medicine with the other professions, such as dentistry, law, and pharmacy, especially in presenting a united professional front on the subject of social trends and needs. We were happy to find the medical men classifying pharmacy as a profession which indicates that we enjoy higher professional prestige than heretofore.

But when we heard the medical examiners discuss and urge the value of annual re-registration both from the standpoint of record

keeping (eliminating use of dead men's certificates, etc.) and as a means of controlling funds to avoid consolidation measures, we felt a little superior as pharmacy realized these advantages years ago and only a few states do not provide for annual re-registration in pharmacy. The idea of the state medical society nominating three members as a suggestive list to be submitted to the governor for aid in making his appointments seemed to be a novel one too—yet pharmacy has had such a provision in many of its laws for years.

At the joint session of the Council on Medical Education and the Medical Boards, there were some intensely interesting papers by prominent psychologists on the subject of vocational guidance; scholastic aptitude tests came up for discussion. We learned that medicine has the same problem that we face—getting the right kind of student from the standpoint of character. The statement was made that in the old days, under the preceptor plan, the undesirable ones usually quit. Now the student does not get the opportunity to see what the practice of medicine is like until after he has completed some six to eight years of training; it is hard to get rid of the misfits then.

The Secretary pointed out the same problem in pharmacy in a paper he read at the Dallas meeting of the Section on Education and Legislation. He also stated that under the old apprenticeship system in pharmacy, we had eliminated most of the unfit; we are now facing the same problem with our college trained man as medicine has had for years. Our solution seems easier, however; a surgeon cannot very well try out a few operations before entering college, or during summer vacations. However, there is nothing to prevent a would-be pharmacist from practicing under a registered man without endangering public welfare, so what is to prevent us from eliminating the unfit by requiring experience *before* graduation? There is little sense in trying to fit square pegs into round holes when this can be avoided.

The essay type of examinations is still most generally used in the medical colleges and in board work. A member of the University of Buffalo faculty presented a paper in which he tried to prove that the essay type of examination was indeed a poor instrument for testing, but it seemed to us that some of his conclusions were unfair. His charts and statistics were based on a single question; a poor student might by chance make a good showing on one question and a good student a poor showing. Had the examination been well-balanced, the conclusions would have had more weight. The objective (short answer) type of questions may be safe for use by expert psychologists who know how to use them, but how can a board member or an educator use them when he has not acquired this skill of preparation? Shall we turn our examinations over to a psychologist who has this faculty but knows little or nothing about pharmacy?

H. C. CHRISTENSEN,
*Secretary National Association of
Boards of Pharmacy.*

How It Happened

WILLIS J. TEETERS, *University of Iowa.*

Two mistakes were directly responsible for placing the Dispensary of the University Hospital, at Iowa City, Iowa, in charge of the College of Pharmacy.

This is what took place. An order for "Salt of Tartar" to be used in washing a patient's hair was filled by sending Cream of Tartar. No fatality resulted, of course, only a matted head of hair and an irate patient resulted. The other mistake happened almost simultaneously and again only indicated complete ignorance of things pharmaceutical. This was in the early days of the X-ray. The air inside the case needed drying and an order for calcium chloride anhydrous brought chlorinated lime which was used with the result of several hundred dollars damage to metal parts by chloric gas.

Probably the money loss in the second case is what brought the matter to the president's office. At any rate, at a meeting in his office he stated that it was the physician's business to know what to prescribe, but the dispensing of drugs should be in the hands of pharmacists and that we proposed to put the drug room of the hospital in charge of the College of Pharmacy. This was a real challenge for service and we accepted the responsibility with the distinct understanding that we were to have full control and to be held accountable for its operation. Up to this time, the Hospital staff elected one of their members to do the buying and the dispensing was done by nurses and internes and there were many keys to the drug room.

The situation called for a major operation which was performed without gas, but as we remember it, nitrous oxide would have been appropriate taking into consideration the amusing things we found. Purchases we found had been made largely from physician supply houses and a large number of the tablets bore the label "Seroco Chemical Co." which we found meant Sears Roebuck Co.

The fish in the Iowa river probably noticed a queer taste in the water as a result of our dumping.

A registered pharmacist was put in charge and no dispensing was allowed by nurses or internes and the number of keys was reduced to one.

This was 34 years ago and since then the work has expanded with the growth of the Medical College. We now employ two full time registered pharmacists and a part-time registered pharmacist to take the evening shift from 5 to 8 p. m.

No doubt the service will be extended to 24 hour service in the not too distant future.

The number of beds are 700 General Hospital; 60 Psychopathic Hospital, and 250 Children's Hospital; all serviced by the one Dispensary by means of underground tunnels.

Our drug bill is well over \$50,000 and drug orders and prescriptions over \$9000 per month. This amount of work could not possibly be done by the present staff if it were not for the fact that an immense amount of bulk preparations are prepared in the Pharmacy laboratory as part of our regular work.

In connection with this has been developed a Drug Service Station in charge of a registered pharmacist who does the buying and is held absolutely responsible for handling all alcohol used in Hospitals or other departments of the University and narcotics as well.

The best proof that the system is sound is the fact that this arrangement has survived six presidents, four medical deans, and at least a dozen hospital superintendents with only words of commendation for service which we aim to make as near 100% perfect as possible.



**Program for the Pharmacy Section N₂ of the American Association for the Advancement of Science,
Denver, Colorado, June 1937.**

1. The Effects of Pinelectomy in the Rat. Marie C. D'Amour, Research Laboratory, University of Denver.
2. The Assay of Commercial Hormone Preparations. Fred F. D'Amour, Research Laboratory, University of Denver.
3. Life Cycle Feeding of Drugs to Albino Rats. (1) Effect of Growth and Maintenance of Weight. Lloyd L. Broughton, School of Pharmacy, University of Kansas.
4. Studies on Strychnine. (XI) Variation in the Response of Certain Birds and Mammals to Strychnine. F. E. Garlough, U. S. Biological Survey.
5. Studies on Strychnine. (X) Further Studies on the Variation of Strychnine Toxicity. Justus C. Ward and Jack F. Welch, U. S. Bureau of Biological Survey.
6. A Comparative Study of Laboratory and Practical Tests for Antiseptic Activity of Lozenges. G. F. Reddish, St. Louis College of Pharmacy.
7. The Qualitative Detection of the Nitro Group in Organic Compounds. Montgomery Hearon and R. G. Gustavson, Bureau of Biological Survey, Department of Agriculture, Denver, Colorado.
8. Specific Oxidative Capacity of Aceter Bacter Suboxydans. Pierre Dozois, C. Jelleff Carr and John C. Krantz, Jr., School of Medicine, University of Maryland.
9. A Physico-Chemical Study of the Erythritan-Boric Acid Complex. John C. Krantz, Jr., C. Jelleff Carr and Frances F. Beck, School of Medicine, University of Maryland.
10. Color Names for Pharmaceuticals. Dean B. Judd and K. L. Kelly, National Bureau of Standards, U. S. Department of Commerce.
11. Bactericidal Effect of Mercury Compounds of Staphylococcus Aureus. D. A. Joslyn, Detroit, Michigan.

One Way in Which to Orient Students in Association Work

B. OLIVE COLE,

School of Pharmacy, University of Maryland.

No doubt there are many ways in which students may be made acquainted with the work of pharmaceutical associations. The way this has been accomplished in Maryland appears to hold out sufficient promise of success to justify giving it some publicity.

Early in 1934 President L. V. Johnson of the Maryland Pharmaceutical Association discussed the advisability of such an organization with the Dean of the School of Pharmacy. In his address before the Annual Convention of the Maryland Pharmaceutical Association in 1934 President Johnson advocated that the students in the School of Pharmacy of the University of Maryland should in some manner be brought into some phase of pharmaceutical association activity. It was decided that this initial contact should be made with the state association rather than with the national association. A special committee, composed of members of the Maryland Pharmaceutical Association and of members of the Faculty of the School of Pharmacy, was appointed to work out the plan of organization. A sub-committee was selected to prepare the Constitution and By-Laws of the Auxiliary. At the Annual Convention of the Maryland Pharmaceutical Association in 1935 the Constitution and By-Laws of the Maryland Pharmaceutical Association were amended to provide for the Auxiliary. "The Students' Auxiliary of the Maryland Pharmaceutical Association" was organized at the School of Pharmacy on November 15, 1935.

The object of the Auxiliary is to provide for the participation of students in the activities of the Maryland Pharmaceutical Association to the end that their interest in pharmaceutical association work may be awakened and guided; and to familiarize them with the conditions existing in and the problems confronting their profession.

Undergraduate students in the School of Pharmacy of the University of Maryland who are members of the second-, third-, and fourth-year classes are the active members of the Students' Auxiliary of the Maryland Pharmaceutical Association. The president of the Auxiliary is elected from the fourth-year class, the first vice-president from the third-year class, and the second vice-president from the second-year class. The Executive Committee is composed of five members, two from the faculty and one from each undergraduate class. The Constitution and By-Laws require that faculty members act as advisory members of the Auxiliary, two on the Executive Committee, two on the Committee on Program, one on the Committee on Publicity, and one on the Committee on Nominations. No student is eligible to hold office or to committee appointment who has not received a passing grade in all courses in the semester immediately preceding candidacy or time of appointment.

Provision is made for the Auxiliary to hold not less than six meetings each year at such times and places and for such purposes as the Executive Committee may designate. Regular business meetings are

held. Several special meetings have been held at which the speaker was an educator or research worker of national reputation. Provision is also made for two delegates to the Annual Convention of the Maryland Pharmaceutical Association, one to be the President of the Auxiliary. The President of the Maryland Pharmaceutical Association is a member, *ex officio*, and without vote, of the Executive Committee of the Students' Auxiliary, and the President of the Students' Auxiliary is a member, *ex officio*, and without vote, of the Executive Committee of the Maryland Pharmaceutical Association.

One of the provisions of the By-Laws which is of vital interest to the student is the provision whereby the students regularly receive the "Maryland Pharmacist", the monthly publication of the Maryland Pharmaceutical Association, which has been made the official organ of the Auxiliary. One-half of the dues of each active member is turned over to the Treasurer of the Maryland Pharmaceutical Association in payment of a subscription for each individual member.

The students are very much interested in the Auxiliary, and the Faculty of the School of Pharmacy and Executive Committee of the Maryland Pharmaceutical Association feel that a forward step has been taken toward the early training of prospective pharmacists in organization work.



The Pharmaceutical Institute at the University of Minnesota

CHARLES V. NETZ.

The first course in the northwest for continuation study in the field of Pharmacy was held February 15th to 17th, 1937, in the building known as the "Center for Continuation Study" recently completed by the University of Minnesota. The accommodations offered by the building are superb for the purpose for which it was erected since it contains excellent living quarters—in hotel style—for 125 persons, dining room, five lecture and demonstrations rooms and a 260-car garage. The Center operates under the direction of Prof. Harold R. Benjamin. There was a three dollar registration fee and a two dollar tuition fee for the three-day institute with living accommodations additional at a very low cost.

The registration at the Institute was limited to fifty pharmacists although more than that number applied. Those in attendance were enthusiastic in their praise and appreciation of the Institute as a whole and all expressed a desire for future repetition. Ninety-six percent of those enrolled were present at all sessions.

The Pharmaceutical Institute was under the direct supervision of Dean Chas. H. Rogers of the College of Pharmacy with members of the staff of the College providing the bulk of instruction although four members of the staff of the School of Medicine, one from the staff of the School of Business and one outside lecturer enthusiastically participated in the program.

The curriculum included lectures, demonstrations and motion pic-

tures intended to supplement the regular college work and "refresh" the minds of those in attendance upon the more advanced undergraduate work offered in the regular college course. The only requirement for enrolling in the Institute was registration as a pharmacist. This of course brought a number who had had no collegiate training and although one might suppose that these individuals due to lack of basic training, would be handicapped in their ability to understand the subject matter offered, they appeared to be just as interested in and receptive to the work as those with better fundamental qualifications.

The arrangement of the program was in charge of a committee composed of Chas. V. Netz, chairman, Profs. Bachman and Fischer of the College of Pharmacy. It is interesting to note that the program as finally arranged and published on November 15th, 1936, was carried through—three months later—without a single change or alteration. Dean Rogers personally supervised the operation of the Institute for the three days.

At the conclusion of the course a certificate indicating "Satisfactory Completion of the Pharmaceutical Institute Offered by the University of Minnesota", signed by Pres. L. D. Coffman, Director Benjamin and Dean Rogers was presented to each of those enrolled.

Below are given the titles of the leading scientific papers delivered at the Institute. The authors in all cases were members of the University faculties as indicated.

The Relationship of the Pharmacist to Public Health, Dr. W. A. O'Brien, School of Medicine.

Recent Research Upon the Constituents of Ergot, Professor Earl B. Fischer, College of Pharmacy.

Iso-alcoholic Elixir N. F. IV: Some Important Prescription Incompatibilities: U. S. P. and N. F. VI; A Discussion of and Reasons for Changes in Formulae and Methods of Manufacture for Aromatic Waters, Syrups, Elixirs, Pills and Sprays, Professor Gustav Bachman, College of Pharmacy.

The Use of an Homogenizer in the Preparation of Emulsions, Mr. Rugnar Almin, College of Pharmacy.

Discussion of the Robinson-Patman Bill. Led by Professor H. J. Ostlund, School of Business Administration.

Allergy, Its Causes and Methods of Immunization, Dr. R. V. Ellis, School of Medicine.

The Practical Application of Research in Pharmacy: A Discussion of the Useful Products and Processes Resulting from Theoretical Research; Chemo-therapy: A Discussion of the Relationship Between the Chemical Structure of Compounds and Their Physiological Activity, Professor Glenn L. Jenkins, College of Pharmacy.

Biological Products in Modern Medicine, Dr. W. P. Larson, School of Medicine.

U. S. P. XI and N. F. VI: A Discussion of and Reasons for Changes in Formulae and Methods of Manufacture for Solutions, Tinctures, Fluidextracts and Ointments, Mr. George Cross, College of Pharmacy.

Books the Pharmacist Should Have and Why, Mr. Charles E. Smythe, College of Pharmacy.

The Standardization of Digitalis: A Discussion of the Various

Methods and Their Application, Professor Earl B. B. Fischer, College of Pharmacy.

Vitamines: A Discussion of the Chemistry, Pharmacology and Methods of Assay, Dr. Ole Gisvold, College of Pharmacy.

The Second Annual Druggists Business Conference sponsored by the School of Pharmacy of the Alabama Polytechnic Institute was held on March twenty-third and twenty-fourth at Auburn. While it was called a business conference there was a goodly sprinkling of papers, the titles and authorship of which indicate professional pharmacy was not forgotten. A few of the outstanding papers were:

Retail Pharmacy Trend as Indicated by New Government Census Figures, Frank A. Delgado, Department of Commerce.

New Organic Medicinals of the U. S. P. XI, George W. Hargreaves, Alabama Polytechnic Institute.

The Trend Toward Strictly Professional Pharmacy and the Obligations of Pharmacy to the State and the Obligation of the State to Pharmacy, Dean Robert C. Wilson, University of Georgia.

Wayne University College of Pharmacy is sponsoring a series of fine lectures for the benefit of the druggists of Detroit. The material presented is necessarily limited to information and facts of a professional nature. Its form of presentation is planned to be completely intelligible to the average retail druggist. The lecturers are prominent pharmacists and physicians and the lectures deal with the following subjects:

1. Advances in Biological Therapy.
 2. Advances in Gland Therapy.
 3. Surgical Supplies and the Pharmacist.
 4. The New U. S. P. and N. F. in Relation to the Pharmacist.
 5. Methods of Doctor Detailing and Prescription Building.
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In May the School of Pharmacy of the Medical College of Virginia will present its second annual pharmaceutical symposium for the retail pharmacists of Virginia and the neighboring states. The papers are all given by faculty members. The titles are as follows:

The Pharmacy of Gland Products, by Dr. R. A. Deno.

The Extraction and Use of Stomach and Liver Preparations, by Dr. J. C. Forbes.

Therapeutics of the Sex Hormones, by Dr. J. R. Main.

The Application of First Aid Treatment by the Pharmacist, by Dr. F. P. Fletcher.

The Antiseptic Value of Some Commonly Used Pharmaceutical Preparations, by Messrs. G. E. Snider and T. D. Rowe.

Bridging the Gap Between U. S. P. X and U. S. P. XI, by Dr. W. G. Crockett.

A series of lectures on pharmacy were delivered at the Connecticut College of Pharmacy, during March, to the students of the sophomore class of the Yale School of Medicine. These lectures are required as a

part of the course in pharmacology at the School of Medicine, and through arrangements with Dr. Henry G. Barbour, Head of the Department of Pharmacology, have been given by members of the staff of the College of Pharmacy during the past four years. This year the lectures were given in the building of the College of Pharmacy rather than in the Sterling Hall of Medicine as done formerly. By attending classes in the college, the medical students returned to the building long occupied by the Yale School of Medicine, and vacated by it only a short time before the College of Pharmacy here was established.

The faculty has also been invited to give a series of lectures before the New Haven Dental Association.

What the Pharmaceutical Teacher Should Teach

The following from the pen of Newton D. Baker, Secretary of War in the days of the World War, is almost prophetic of what is occurring today. One of our Collaborators has asked to have some of the choice things of the past reprinted. Here is one that is an inspiration irrespective of the number of times it has been read.—Editor.

"We can only pick out a certain number of limited fields in which we can have a fairly thorough going education. Now that brings up this problem; young men and young women come to you to be educated in a specialty. Obviously, so far as that specialty is concerned, it is of the highest importance that that educational subject should be soundly given. But if you educated them into perfect pharmacists and left off there, so that they had no contact outside of the narrow circle of the science in which you instruct them, they would not yet be equipped for life, and so the duty upon you as educators, is to find out where the most fruitful contacts are between a well given pharmaceutical education and the rest of the education which is necessary for a rounded and useful, and therefore happy life on the part of those who are the graduates of your institution.

After all, the hardest problem that a man has when he leaves college is to fit his diploma to life—it doesn't fit automatically. He gets out and life is rectangular and his diploma is round, or his diploma is rectangular and life is round. The process of fitting that diploma to life is probably the most critical and discouraging experience the young have. You can make it easier to fit the diploma if, instead of having your pharmaceutical education a round education, you have it with antennae (so to speak)—arms that reach out and touch with sympathy the related branches of learn-

ing, and that is especially interesting to pharmacists because, after all, pharmacy is a kind of half-way house between research of pure chemistry and the application of chemistry by the medical profession.

You are just in the middle—the research man discovers and the engineer carries it into practice, but the pharmacist is mid-way between those two, and if your students could have a real, live sympathy with the scientific problems of pharmaceutical chemistry and some sort of sympathetic understanding of the problems which the internal medicine doctor has to deal with—if he could see his own problems in those two points of view he would be a more useful pharmacist.

In addition to that, the pharmacist has to be a citizen. Lawyers and doctors have to be citizens and you can't be a good citizen by being merely a good lawyer or merely a good pharmacist. Sometimes I think the pharmacist has a special obligation as a citizen. He usually has his store on the corner and it is a place where the neighborhood gathers. If he is a man of firmness of character and knowledge, he gets to be a man of influence quite without knowing it, because he is in the center of a village community. This is of the highest importance that, among the subjects with which you seek to inspire your students, shall be those great public subjects—political questions, if you please—in which the common good is to be worked out by cooperation of citizens.

Of course, I may add too that one other thing. There is probably no other profession in which the ethical content is so necessarily high as it is in the pharmacist's profession. For a variety of reasons, which you will understand without my enumerating them, the druggist has control of a great set of agents which the weak and frail members of society seek to acquire to misuse, and unless the pharmacist be a man who has a very high moral purpose, unless he can see straight and think clear, he is likely to be a danger to himself and his community.

I have said all that I came here to say. What I came here to plead for was that the Pharmaceutical Faculties should recognize the dignity of their relation to all education, for in this selective age, when it is no longer possible to know everything, the force of circumstances requires that a certain number of young men and young women shall bring their natural endowments to you to be trained. If you give

them a limited perspective and unsympathetic education and unenlightened skill, merely, then you have not done your whole duty by that priceless thing which those young people have brought to you to be trained, but if you give them contact with liberal and enlightening things and if you give them sympathies of a broad and general character, if you infect them with the consciousness of the fact that they are citizens and have great duties in that regard, and if you underlay all of those faculties with a broad ethical and moral basis, showing that character, after all, is the rock upon which both success and usefulness must be established, then pharmaceutical education will assume and maintain the same dignity in the great collection of educational faculties which are sought for and attained by other sciences."

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Fellowships, Scholarships, Graduate Assistantships and Undergraduate Awards Offered by the Colleges of Pharmacy in the United States.

THE COLLEGE OF PHARMACY, UNIVERSITY OF MICHIGAN
(Regular fees of the Graduate School are required.)

Frederick Stearns and Company Fellowship.....	\$500
The Parke, Davis and Company Fellowship.....	500
The Upjohn Company Fellowship.....	750

MASSACHUSETTS COLLEGE OF PHARMACY
(Tuition and Laboratory fees required.)

Graduate Fellowships (3) each.....	\$900
George F. H. Markoe Memorial Scholarship.....	25
Robert W. Greenleaf Memorial Scholarship.....	25
Julian W. Baird Memorial Scholarship.....	25
Edgar L. Patch Memorial Scholarship.....	240
Massachusetts State Pharmaceutical Association Scholarship.....	180
McKesson-Eastern Drug Company Scholarship.....	180
Gilman Brothers Scholarship.....	180
Kappa Psi Scholarship.....	50
Phi Delta Chi Scholarship.....	75
Rho Pi Phi Scholarship.....	50
Students' Scholarship.....	50
Graduate Fellowships (3) each.....	\$900

COLLEGE OF PHARMACY, UNIVERSITY OF MINNESOTA

Minnesota State Pharmaceutical Association Scholarship and token	\$105
Minnesota State Pharmaceutical Association Fellowships (2) each	250

COLLEGE OF PHARMACY, OREGON STATE AGRICULTURAL COLLEGE	
Oregon State Pharmaceutical Association Educational Fund	
Scholarship	\$100

SCHOOL OF PHARMACY, UNIVERSITY OF MARYLAND
(No tuition or laboratory fees required.)

The H. A. B. Dunning Research Fellowship.....	\$1,000
The Charles Landon Henry Memorial Scholarship.....	100
Research Grant, Alumni Association of School of Pharmacy.....	100
Graduate Assistantships (16) each.....	550
Allocated as follows: Pharmacy, 7; Chemistry, 5; Economics, 1;	
Pharmacology, 1; Bacteriology, 1; Botany and Pharmacognosy, 1.	

SCHOOL OF PHARMACY, PURDUE UNIVERSITY
(No tuition or laboratory fees required.)

Fellowships (3) each	\$400
Graduate Assistantships (4) each.....	700

DEPARTMENT OF PHARMACY, NORTH DAKOTA STATE COLLEGE

Assistantship	\$450
Assistantship	135
North Dakota Pharmaceutical Association Award—Freshman.....	10
North Dakota Pharmaceutical Association Award—Sophomore.....	25

DIVISION OF PHARMACY, SOUTH DAKOTA STATE COLLEGE

Rowland Jones Award.....	\$ 50
Jewett Drug Company Fellowship.....	200

SCHOOL OF PHARMACY, UNIVERSITY OF TENNESSEE

Fellowship in Chemistry, first year \$600; second year.....	\$750
Fellowship in Pharmacology-Pharmacology, first year \$600;	
second year	750

COLLEGE OF PHARMACY, UNIVERSITY OF SOUTHERN CALIFORNIA

Brunswick Scholarship	\$150
McKesson and Robbins, Incorporated, Scholarship.....	150

SCHOOL OF PHARMACY, UNIVERSITY OF FLORIDA
(Remission of some fees, such as non-resident tuition.)

Graduate Assistantship	\$450
Graduate Scholarships, each	300

SCHOOL OF PHARMACY, UNIVERSITY OF BUFFALO
(Exemption from tuition and fees, except \$25 laboratory fee.)

Graduate Assistantship in Materia Medica.....	\$500
Graduate Assistantship in Chemistry.....	500

COLLEGE OF PHARMACY, UNIVERSITY OF NEBRASKA
(Exemption from fees.)

Graduate Assistantships (2)	\$500
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LOUISVILLE COLLEGE OF PHARMACY

The Simon N. Jones Memorial Scholarship.....	\$150
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MEMORIALS

ELIE H. LAPIERRE

Professor LaPierre was truly a druggist of the old school. He was an American, born in Connecticut, of a French-Canadian father and an American mother. His father died when he was a small boy. He received a rather desultory education but good enough for the times in which he grew up. He entered the service of an apothecary in Concord, Massachusetts; served an apprenticeship there and became under that man's guidance, an enthusiastic botanist. He entered the Massachusetts College of Pharmacy and was graduated in 1880. After graduation he established himself in business and, for a time, served on the board of trustees. He was then appointed as an instructor in pharmacy and served along with Wilbur Sproul under Edgar L. Patch.

His academic training was not so very extensive but with this apprenticeship and service under those men he had a thorough pharmaceutical training. He developed into a man of delightful personality.

I myself have been in educational work as a teacher for something over forty years and I have never worked with a man who has been so dearly beloved by his students as Elie LaPierre. He connected our college with the past and the humble history of our beginnings in an unusual degree. There are several men in the room who worked under him as a student or as associates in the college, and we all have this feeling of devotion to him and his work. His devotion to pharmacy and his students was so exceptional, that it dominated the men and helped to direct them.

During the last eight or ten years he had been a great sufferer from arthritis and, toward the end, became utterly helpless. Gangrene developed because of poor circulation in his limbs, and he passed away during May. Thus we have lost, perhaps, the last connecting link that we had with the old Massachusetts College of Pharmacy. We lose these men as we go on, and we must go on, but every time I lose a close friend, an associate like this, as I have lost John G. Godding and several others since I have been in Boston, I have the feeling that we must fill their places the best we can, but the world isn't quite the same place without them.

T. J. BRADLEY.

ANTOINE EDWARD GREENE

Antoine Edward Greene was born in Boston, Massachusetts, May 19, 1902, the son of Charles L. Greene and Annie (nee Collins) Greene, and died in Washington, D. C. after an illness of several months, on November 30, 1935.

Professor Greene received his early training in the public schools of Cambridge, Massachusetts. He was an honor graduate of the Massachusetts College of Pharmacy in the Class of 1922. He traveled extensively and studied at the Massachusetts Institute of Technology and the Universities of Boston, Michigan, and Wisconsin and in France. At the time of his death he was Associate Professor of Pharmacy at

Howard University. He married Edith Watson of Washington, D. C. in 1924. He was a member of the American Pharmaceutical Association, the American Medical Association, the National Technical Association and the Chi Delta Mu Fraternity. He was a frequent contributor to scientific and educational journals. He looked upon the College of Pharmacy of Howard University as his life work. He brought to it the same diligence, devotion, and undivided attention which had characterized him as a student, and was zealous of its reputation. His death removed another of that remarkable group of men who built into the school many years of devoted and unselfish service. His life and memory should serve as an inspiration to those of us who remain to carry on.

DANIEL H. SMITH.

WALDEMAN BRUCE PHILIP

In his fifty-eighth year, Waldeman Bruce Philip passed away July 13, 1936. He had been ill in a Washington hospital and at his home in Oakland, California for almost a year.

Dr. Philip, a pharmacist and a lawyer held degrees from the University of California College of Pharmacy, the Hastings College of Law, the New York College of Pharmacy, and the National University, in Washington, D. C., and an honorary degree from the Philadelphia College of Pharmacy and Science.

Dr. Philip was born in Sacramento, California, July 19, 1878. He married Miss Fayette Harris, a classmate at the University of California College of Pharmacy, in 1904, and the next year, the firm of Philip & Philip established a retail pharmacy at Fruitvale.

Bruce Philip was a loyal friend to his fellow men, and an indefatigable worker for pharmacy. Before his untimely loss, pharmacy had grown to love and depend upon him, and he served faithfully in many and various capacities. He was the eightieth president of the American Pharmaceutical Association, a teacher at the University of California for more than a decade, and at the time of his death, was Instructor in Pharmaceutical Economics and Jurisprudence in the George Washington University School of Pharmacy. He was a former president and secretary of the Alameda County Pharmaceutical Association, and for many years Secretary to the San Francisco Retail Druggists Association, a member of the Board of Trustees of the U. S. P. XI, Chairman of the House of Delegates, and Vice-Chairman of the Council of the American Pharmaceutical Association. He had been a vice-president of the National Association of Retail Druggists and for several years its Washington representative, and was serving as secretary to the District of Columbia Pharmaceutical Association. He was a grand regent of Kappa Psi.

Dr. Philip possessed the foresight and capacity for leadership which he used in the interest of his fellow men without thought of personal reward. His fine ideals, his courage, his loyalty, and his love for pharmacy brought him many friends. His place in the profession will be difficult to fill and many throughout the nation are sorrowed at the loss of a real friend.

W. PAUL BRIGGS.

HENRY BENJAMIN CAREY

Dean Carey died on February 4, 1937, following a short illness. His death brought to a close more than thirty years of continuous service as a member of the faculty of the University of California.

Dean Carey was born in Mapleton, Minnesota, on April 13, 1876. He graduated from the University of Minnesota in June, 1900, receiving the bachelor's degree with honors. In 1905 he graduated from Northwestern University Medical School, receiving the degree of Doctor of Medicine, cum laude. He was a member of the honorary medical society, Alpha Omega Alpha, the American Medical Association and the American Pharmaceutical Association.

He began his teaching at the School of Pharmacy, Northwestern University, in 1900. In 1906 he received the appointment of Professor of Botany and Pharmacognosy at the California College of Pharmacy and had continued in this position for the last thirty years. In 1907 Dean Carey assisted in the launching of the *Pacific Pharmacist*, a journal devoted to scientific and progressive pharmacy. He served for eleven years as associate editor and editor of this journal.

In September, 1932, he became Acting Dean of the California College of Pharmacy, which in July, 1934, became the College of Pharmacy, University of California. During his administration the College of Pharmacy made great progress in raising standards of teaching and the practice of pharmacy in the state.

Dean Carey was an excellent teacher and well-liked and respected by all who knew him. He was a loyal and true friend who had devoted his time conscientiously toward the betterment of the pharmacy profession. His going is a distinct loss to this profession as well as to the institution which he served.

TROY C. DANIELS.

WILLIS GEORGE GREGORY

For almost fifty-seven years Dr. Willis G. Gregory was a member of the University of Buffalo. He entered the School of Medicine in 1880 and graduated with the degree of Doctor of Medicine in 1882. Within four years after his graduation he began that service to the University which continued without interruption for more than half a century. He was one of the organizers in 1886 of the new School of Pharmacy, the second unit of the University to be created and joined the faculty as the first professor of pharmacy. He held that chair for the remainder of his life. Within another four years he was chosen Dean of the School. He served in the combined capacities of dean and professor of pharmacy for forty-six years, retiring from the deanship only last summer.

The deanship of a professional school is a post of peculiar responsibility and of rare opportunity. The dean of a professional school is expected not only to provide an effective organization for a large group of people engaged in very complicated and highly individual tasks; not only to be a wise adviser and a just judge in issues of personal perplexity or of controversy. He is expected also to be the intellectual leader of a company of specialists, to focus their thinking on

questions of institutional policy, to guide their combined efforts toward clear and definite ends. And if his vision and his technical attainments run to it, he has the opportunity to aid in the elevation of his profession both through the work of his own school and through participating in the undertakings of his fellow craftsmen in state and national organizations. In short, the dean of a professional school is expected to be a competent manager, an adept in human relations, a scholar who commands the respect of scholars, and for good measure something of a statesman. The requirements are so diverse that it is not surprising that they are seldom completely fulfilled.

Dr. Gregory met them—every one. He seemed to have been fitted by nature for the precise task to which his energies were so lavishly devoted throughout a life prolonged beyond the common span. His school was a model of system and order. To faculty and students he was guide, philosopher and friend; and he and they took daily comfort in the relationship. Under his leadership the school acquired the finest of physical facilities designed in large part by him. Its standards of entrance and graduation were steadily raised. Its faculty made significant contributions to the sciences underlying the pharmacist's art and to the methods used throughout the United States in training members of the pharmaceutical profession. And he himself, through his chairmanship of various important professional bodies, enjoyed for a generation almost unique distinction among the national leaders of the profession, who in the course of a generation have transformed it.

But to the University of Buffalo Dr. Gregory was something more than the dean of one of its oldest professional schools, something more than an exceptionally vigorous and able administrative officer. And close to his heart as was the School of Pharmacy, it was the University as a whole that claimed his deepest loyalty. He never thought of it fractionally. As teacher, as dean of one of its divisions, and finally as a member of its governing board, he served the whole University and worked without a trace of parochial self-interest for its integral advance. Although the School of Pharmacy is essentially his creation and will remain perhaps his most tangible monument, his identification is not with it. He is identified with the University. It is the whole University that has lost him and now mourns.

But after all it is only his gracious physical presence that is gone. The great residue of a splendid life lived in obedience to the highest standards of conscience, of a character sweet and generous and firm, of an excellent work full-rounded and complete, remains and will endure. It is of such deposits as this that the tradition of a university consists.

The essential quality of a university is determined by the influence which radiating personalities exert. Though the influence is invisible, it is a potent reality. And it is not ephemeral. Dr. Gregory has permanently altered for the better the lives of thousands of students, faculty and alumni, his contemporaries. He has enriched the spirit of the University of Buffalo for all time.

SAMUEL P. CAPEN,
President, University of Buffalo.

ASSOCIATION INSTITUTIONS

(Continued from page 1)

MEMBERSHIP IN THE

(Front Cover)

MONTANA

State University of Montana, School of Pharmacy, Missoula; Charles J. Smith, Dean (1917).

NEBRASKA

Creighton University, College of Pharmacy, Omaha; William J. Jarrett, Dean (1916).

University of Nebraska, College of Pharmacy, Lincoln; Rufus L. Brown, Dean (1913).

NEW JERSEY

Rutgers University, The State University of New Jersey, New Jersey College of Pharmacy, Newark; Ernest Little, Dean (1923).

NORTH CAROLINA

University of North Carolina, School of Pharmacy, Chapel Hill; A. G. Beard, Dean (1917).

NORTH DAKOTA

North Dakota Agricultural College, School of Pharmacy, Fargo; W. H. Ham S. Sudro, Dean (1922).

OHIO

Ohio Northern University, College of Pharmacy, Ada; Rudolph H. Hache, Dean (1925).

Ohio State University, College of Pharmacy, Columbus; Clair A. Dean (1900).

Western Reserve University, School of Pharmacy, Cleveland; Edward Spang, Dean (1902).

OKLAHOMA

University of Oklahoma, School of Pharmacy, Norman; David H. Johnson, Dean (1905).

OREGON

Oregon State Agricultural College, School of Pharmacy, Corvallis; Adolph Zicke, Dean (1915).

North Pacific College of Oregon, School of Pharmacy, Portland; Antone O. Mickelson, Dean (1914).

PENNSYLVANIA

Duquesne University, School of Pharmacy, Pittsburgh; Hugh C. Muldon, Dean (1927).

Philadelphia College of Pharmacy and Science, Philadelphia; Charles H. LaWall, Dean (1900).

University, School of Pharmacy, Philadelphia; H. Evert Smith, Dean (1923).

University of Pittsburgh, Pittsburgh College of Pharmacy, Pittsburgh; C. Leonard O'Connell, Dean (1907).

PHILIPPINES

University of the Philippines, College of Pharmacy, Manila; Mariano del Rosario, Dean (1917).

Puerto Rico

University of Puerto Rico, College of Pharmacy, Rio Piedras; Lucas A. Vela, Dean (1924).

RHODE ISLAND

Rhode Island College of Pharmacy, Allied Sciences, Providence; Henry Elvard, Dean (1904).

SOUTH CAROLINA

University of South Carolina, School of Pharmacy, Columbia; Henry T. Motley, Dean (1923).

SOUTH DAKOTA

South Dakota State College, Division of Pharmacy, Brookings; Paul R. Series, Dean (1906).

TENNESSEE

University of Tennessee, School of Pharmacy, Memphis; Robert L. Gove, Dean (1914).

TEXAS

University of Texas, College of Pharmacy, Austin; William F. Ridley, Dean (1923).

VIRGINIA

Medical College of Virginia, School of Pharmacy, Richmond; Worthington H. Budd, Dean (1903).

WASHINGTON

University of Washington, College of Pharmacy, Seattle; Charles W. Johnson, Dean (1905).

State College of Washington, School of Pharmacy, Pullman; P. H. Dirstine, Dean (1913).

WEST VIRGINIA

West Virginia University, College of Pharmacy, Morgantown; J. Lester Hayman, Director (1920).

WISCONSIN

University of Wisconsin, College of Pharmacy, Madison; Arthur H. Uhl, Director (1900).